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An Analysis of Outcome-based Education into Educational Practices at University Level

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Abstract: *Analysing the integration of outcome-based education into university-level instructional methods was the goal of the study. The objectives of the study were to investigate the integration of outcome-based education into teaching practices at the university level and to assess the differences between the perspectives of educators and students regarding the role of outcome-based education in educational practices. A quantitative research design was selected to accomplish the research goals. For this purpose, all universities in Pakistan were selected as the accessible population of the study. A purposive sampling technique was used to gather data from Rifah International University in Lahore. Sixty-five students and twenty educators were selected for the purpose of data collection. A self-made questionnaire was developed after thoroughly studying the related literature. The research tool was pilot-tested, and the consistency of the research tool was found .89. The collected data was further analysed by using descriptive and inferential statistics. Mean, Standard Deviation, and t-tests were applied thoroughly to compare the responses of university educators and students. It was determined on the basis of findings that outcome-based education plays a beneficial role in university-level teaching techniques. Therefore, it was recommended that all of Pakistan's universities implement the outcome based on their teaching activities.*

Key Words: Outcome-based Education, Educational Practices, Integration, Teaching Activities

Introduction

According to (Asim, Vaz, Ahmed, & Sadiq [2021](#); Woo, Kim, & Lim, [2017](#) Lin, [2004](#)), in the field of education, innovations and modifications are always welcome in order to address the demands of the challenging world. The challenges of the modern world can be beaten through technology integration, new educational methodologies, emphasis on learning instructions, and the adoption of new techniques and strategies to achieve the learning objectives to lead the system of education towards economic prosperity that further enhances the economic status of the nation. In spite of the emerging transformation of technology in the field of education, there is also a need to accept the shift of the emerging paradigm to start a new period of education with a novel system in the teaching and learning process. Therefore, according to (Minaz, Tabassum, and Idris, [2017](#)), the major reform was the shift of the educational paradigm from a teacher-centred approach to a student-centred approach.

Among the educational reforms, one of the most emerging and novel approaches was outcome-based education. According to (Alimyar, [2020](#)), a teaching approach that focuses on the achievement of the learning objectives and student centre teaching strategies instead of the teacher centre approach is known as Outcome-Based Education (OBE). In particular, outcome-based education places a strong emphasis on

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meeting preset learning goals that equip students to handle the challenges of the twenty-first century (Harden, 2002). The word "OBE" was first used by (Spady, 1988), a distinguished academician and psychologist best known as the "Father of Outcome-Based Education." This blog intends to assist educators, academics, and educationalists in comprehending the idea of OBE and how it might aid in optimising the achievement of their pupils.

As cited by Mohayidin, Suandi, Mustapha, & Konting (2008), due to the lack of soft skills, thousands of graduates were passed out from institutions, but they were not capable of meeting the market requirements; therefore, the Outcome Based education provided the essential skills of problem-solving, decision making, communication skills, use of modern technologies and most important active learning instead of passive learning. As highlighted by Kaliannan & Chandran (2012), outcome-based education is an influential teaching module which helps teachers and students restore the theoretical contents in practical life.

Due to the expansion of technology in educational practices, students must know about problem-solving skills, how to communicate effectively with others, how to utilise technology and manage new technology advancement and how to facilitate themselves by using modern technologies. One of the more effective methods for encouraging students to participate actively in class activities is outcome-based education, as stated by Bouslama, Lansari, Al-Rawi, & Abonamah (2003). The theoretical underpinning of outcome-based education was closely aligned with modern approaches like constructivism, active learning, and student-centred learning. This alignment made it easier for educational institutions to achieve their predetermined goals and objectives. Meanwhile, all educational practices are explicitly stated in curriculum statements (Midraj, 2018; Baguio, 2019).

Like in other countries, new discoveries in the educational sector are taking place in Pakistan. The use of new methods is a recently emerging trend in education. Outcomes-based learning gained familiarity in the educational sector. It is mostly used in Schools, colleges and universities. As Govt of Pakistan, 2014 Pakistan Engineering Council accreditation manual identifies that the entire curriculum of outcome-based education focused on the identified objectives. Furthermore, these steps will be beneficial for the quality of the teaching and learning process. Furthermore, the use of appropriate knowledge in real-life situations, bringing it into line with the assessment process, collaborative to curriculum planning, promoting individual learning, refinement of the skills, establishing attitude and experiences for new learning and providing inspiration in continuousness and flexibility between post-secondary program (Avalos 2015).

Furthermore, Outcome-Based Education (OBE) has been observed as a noteworthy method that demands teachers and students to focus on the planned outcomes or instructional outcomes, as well on the entire educational practices or process that help them achieve the predetermined classroom outcomes (Roxas & Reyes, 2015; Orfan, 2021).

Davis (2003) makes decisions about the curriculum before the determination of the instructional outcomes, which is outcome-based education. It indicates that the results existent about a course for the students should be displayed at the end of the course whether they have been attained or not. As recommended by (Spaddy 1994), the curriculum and syllabus must be properly framed by a teacher. The course content and intended results are decided by the teacher. A teacher must develop a high-quality syllabus with outcomes because these are the key factors that determine a student's success in OBE. Instructors are the ones who motivate students to participate in OBE and outline its benefits. In order to determine how well their pupils are doing in OBE, teachers also create survey and assessment questions.

Students contribute significantly to the ongoing creation of outcome-based instruction by providing feedback, taking part in surveys, writing projects, and annual exams (Spady, 1994).

Problem Statement

The modification of the educational paradigm from a traditional to a constructivist approach was due to COVID-19, and the execution of Outcome-Based Education (OBE) in educational institutions has expanded the distinction as a paradigm shift towards a more student-centred approach. However, a critical examination of the effectiveness and challenges associated with the adoption of OBE is imperative for its successful integration into diverse educational settings. According to Williamson (2000), comparative

analysis of Outcome Education at the University level can provide valuable perceptions of the integration in the educational practices the process and its impact on student's success; therefore, the current comparative study aims to analyse the Outcome Based Education into Educational Practices at University Level.

Objectives of the Study

The following objectives were developed:

1. To investigate the integration of outcome-based education into educational practices at the university level
2. To assess the differences between the perspectives of educators and learners regarding the role of outcome-based education in educational practices

Research Hypotheses

To achieve the above objectives, the following hypotheses were tested;

1. **H₀₁**: Outcome-based education has no significant integration into educational practices at the university level.
2. **H₀₂**: There is no significant difference among the perspectives of educators and learners about the role of outcome-based education in educational practices.

Theoretical Framework

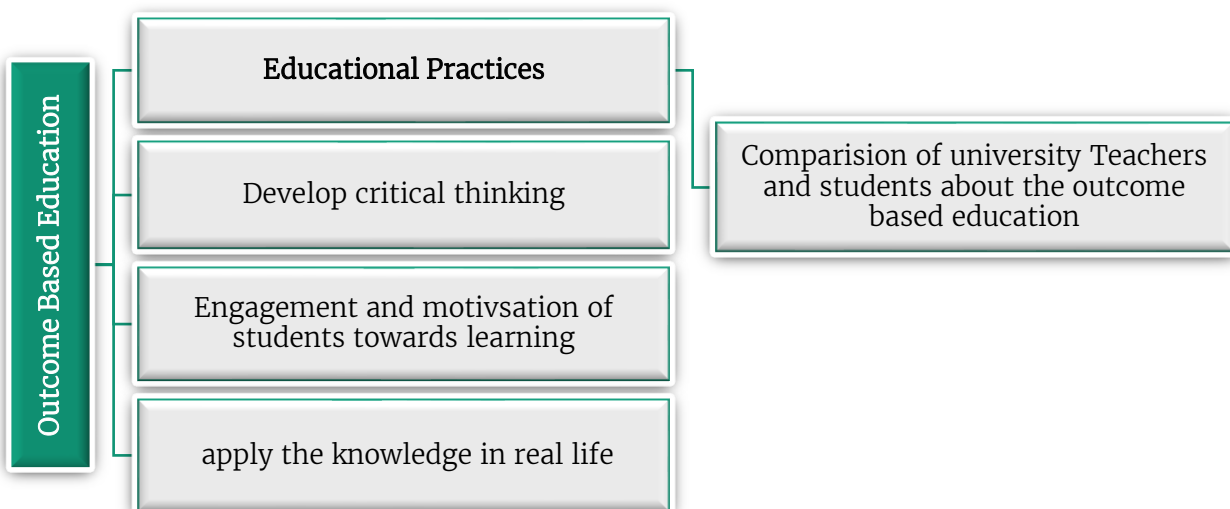
The current research is influenced by the shift from teacher centred paradigm to student centred paradigm; therefore, the constructivist learning theory (Minaz, Tabassum, & Idris, 2007; Von Glasersfeld, 2012) was closely related to outcome-based education, where the students construct their own knowledge with their own phase. Outcome-based education facilitates the student to work on the prearranged goals set by the educationist.

Conceptual Framework

The current research is a comparative analysis, and the major variables of the study were outcome-based education and the educational practices at the university level, as well as the comparison of university educators and students about outcome-based education. The subsequent figure reflects the conceptual framework of the study:

Figure 1

Conceptual Framework of outcome-based education into educational practices at university level





Literature Review

A review of Outcome Based Education and factors that impact student learning outcomes in the tertiary Education system was conducted by (Asim, Vaz, Ahmed, & Sadiq [2021](#)). For the purpose of a review on Outcome-based education, the researcher studied published research articles from 2005 to 2020. They concluded from the findings that the assessment strategies are the important factor that impacts student learning outcomes during OBE. Furthermore, effective assessment methods can help measure students' achievement of the desired learning outcomes.

According to Willis & Kissane ([1995](#)), outcome-based education emphasises the skills and talents that students need to accomplish a target established by the programme. They recommended that outcome-based education (OBE) should set clear learning objectives for students and then provide the essential pieces of equipment and guidelines to achieve the objectives for the promotion of paradigm and instruction to evaluate the teaching strategies to reach the predetermined goals.

As concluded by Asim, Vaz, Ahmed, and Sadiq ([2021](#)), outcome-based education has five elements that affect the student's instructional outcomes. They further emphasised educational practices of outcome-based education in the process of teaching and learning.

Furthermore (Katawazai, [2021](#)) conducted a research study focused on the current practices and challenges of outcome-based education as student-centred learning in Afghan public Universities. During the mixed method approach, the researcher collected quantitative data from a number of one hundred and twenty university educators and a number of seven experts in the field of outcome-based education. The study findings revealed that university educators were positive in the provision of outcome-based education. In spite of the ultimate implementation of the educational approach, the teachers highlighted some key challenges during the application of the program. They further highlighted that poor infrastructure systems, loaded coursework, educational policies, and teachers' capability were the major obstacles to the implementation of outcome-based education. They recommended that the policy maker and Ministry of Education should emphasise the educational setup to face these challenges during the teaching-learning process.

A review was conducted by Bouslama, Lansari, Al-Rawi, & Abonamah ([2003](#)). They proposed an outcome-based education model for the rapid retort of the challenges in the UAE's educational sector. They concluded that the integration of technology, modern assessment strategies, student interest and educational practices enhance the efficiency of outcome-based education.

Methodology

Design of the Study

Considering the descriptive nature of the study, the quantitative survey research design was used to determine the studies to determine whether outcome-based education was beneficial and what difficulties University teachers faced. According to Gay & Pearson ([2012](#)), the questionnaire is better to collect data in quantitative research as it is time-saving, cost-effective and easy to use.

Population of the Study

The integration of Outcome-based education is provided by one of the universities of Lahore located in the Province of Punjab, which is the Rifah International University. Therefore, the available population of the study was all the university educators and teachers on the university campuses, Islamabad, Malakand, and Faisalabad, selected to accomplish the research objectives.

Sampling Technique

According to Creswell ([2014](#)), a sample is a subgroup of the target population that the researcher plants to research for generalising about the target population. Furthermore, for the researcher's convenience, Lahore Campus was selected as the study location. Sample A total number of sixty-five (65) male and female students studied at the BS level on the Lahore campus and a number of twenty (20) university educators were selected using a convenient sample technique.

Table 1

Sample size of teachers and students

Department	Level	Male students	Female students	Male Teachers	Female
English	BS	25	10	05	05
Applied Psychology	BS	15	10	05	05

Research Instrument

A self-developed questionnaire was validated before data collection. Furthermore, the validated research instrument was pilot-tested, and the reliability of the instrument was found to be .89. Cronbach's alpha was reliable, according to Yusuf, Shinta, & Fransisco (2020). The instrument was a point Likert Scale that was (Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree) was used to collect data from Riffah International University Lahore main Campus.

Data Collection and Data Analysis

The composed data from the Riffah International University Lahore by keeping all the ethical values in mind, was analysed by using SPSS.27. For the comparison of the perceptions of University graduates and students about outcome-based education into education practices, the independent Sample *t*-test, mean Standard deviation and eta square was calculated. In the current analysis, educators and students were measured through the stated test because this variable consists of two values. Creswell (2013), Kumar (2011), and Adnan (2018) stated that the independent samples *t*-test are employed when a researcher wants to compare or determine the relationship between two variables.

Interpretation of Data

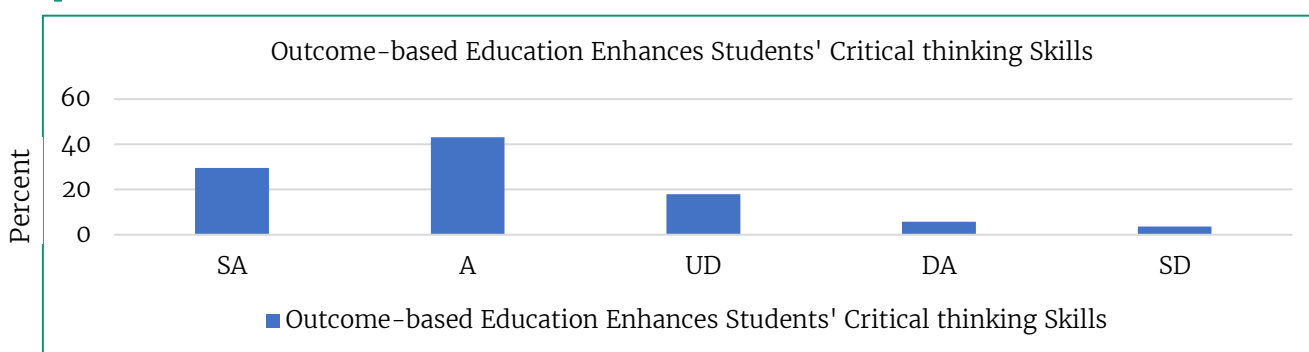
The following tables demonstrate the analysis of the data and interpretations accordingly.

Table 1

Outcome-based education enhances the critical thinking skills of students.

Respondent	N	Mean	STD	Eta
Teacher	20	1.60	.68	.887
Student	65	2.15	.94	

The analysis of Table 1 showed the high mean score of teachers (Mean=1.60 and Std=.68); furthermore, the students also had a high mean score (Mean=2.15 and Std=.94) which indicated the efficiency of outcome Based Education in educational practices. The mutual agreement of students and teachers regarding the integration of outcome-based education at the university level specified that due to Outcome-based education, critical thinking skills of the University students were enhanced.

Graph 1

The above graph shows that 29.5% of participants (University Graduates and students) highly agreed with the statement that Outcome-based education enhances students' critical thinking skills at the university level, 43.2% agreed, and only 5.7% showed a disagreeing response.



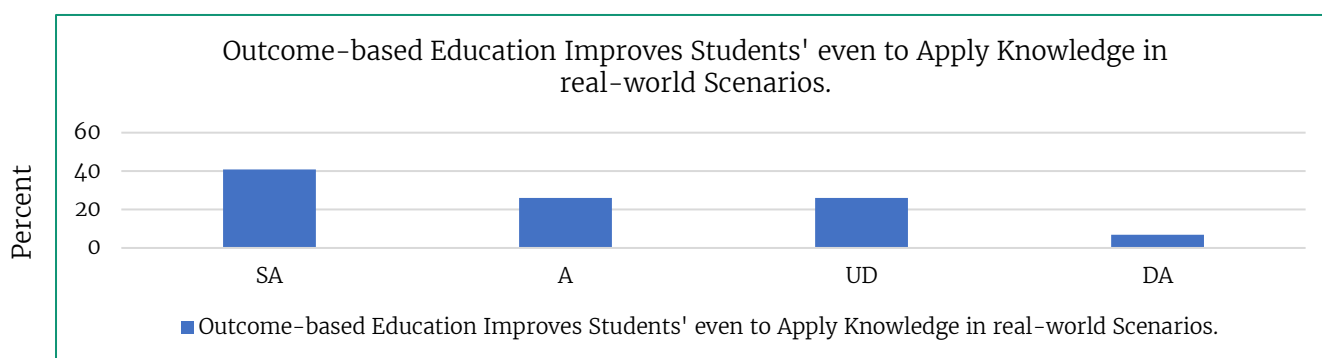
Table 2

Outcome-based education improves students' ability to apply knowledge in real-life settings.

Respondent	N	Mean	STD	Eta
Teacher	20	1.60	.75	.960
Student	65	2.06	1.04	

The analysis of Table 2 showed the high mean score of teachers (Mean=1.60 and Std=.75). Furthermore, the students also had a high mean score (Mean=2.06 and Std=1.04), which indicated the integration of Outcome Based Education in educational practices at the university level. Students and teachers agreed about the educational practices of outcome-based education at the university level and that outcome-based education improves students' ability to apply knowledge in real-life situations.

Graph 2



The above graph showed that 40.9% of participants (University Graduates and students) strongly agreed with the statement that Outcome-based education improves students' ability to apply knowledge in real-life scenarios, 26.1% agreed, and only 6.8% showed a disagreeing response.

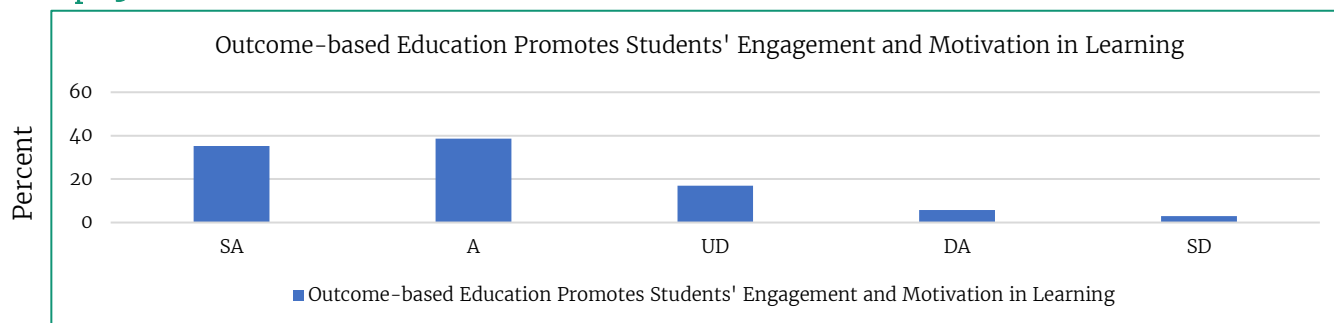
Table 3

Outcome-based education promotes students' engagement and motivation in learning.

Respondent	N	Mean	STD	Eta
Teacher	20	1.90	.91	.943
Student	65	1.97	.95	

The analysis of Table 3 showed the high mean score of teachers (Mean=1.90 and Std=.91). Furthermore, the students also had a high mean score (Mean=1.97 and Std=.95) which indicated the integration of Outcome Based Education in educational practices have a positive role. Students and teachers agree regarding the integration of outcome-based education at the university level; therefore, outcome-based education promotes students' engagement and motivation in learning.

Graph 3



The above graph shows that 35.2% of participants (University Teachers and Students) were strongly agreed with the statement regarding Outcome-based education promotes students' engagement and motivation in learning, 38.6% agreed, and only 5.7% showed a disagreeing response.

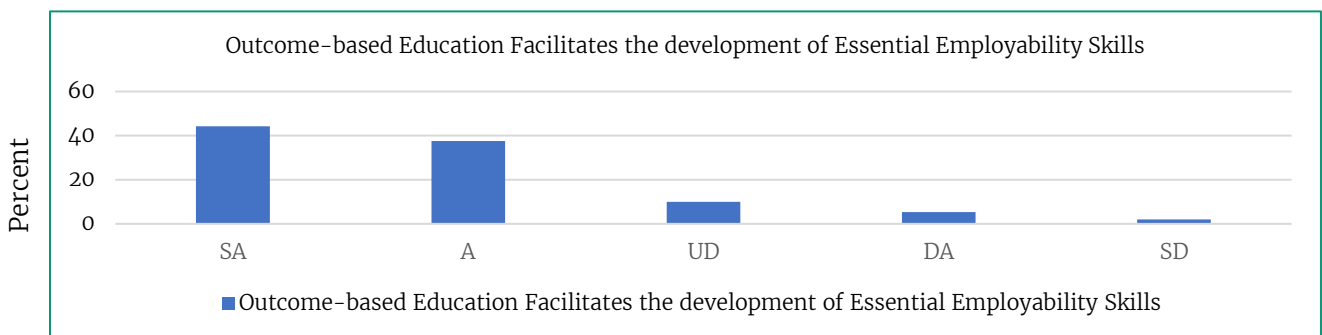
Table 4

Outcome-based education facilitates the development of essential employability skills.

Respondent	N	Mean	STD	Eta
Teacher	20	1.80	.67	.876
Student	65	1.74	.94	

The analysis of Table 4 showed the high mean score of teachers (Mean=1.80 and Std=.67). Furthermore, the students also had a high mean score (Mean=1.74 and Std=.94), which indicated the integration of Outcome Based Education in educational activities at the University level. The mutual agreement of students and teachers regarding outcome-based education at the university level showed that outcome-based education supports educational practices at the university level in response to facilitating the development of essential employability skills.

Graph 4



The above graph shows that 44.3% of participants (University Graduates and students) strongly agreed with the statement that Outcome-based education facilitates the development of essential employability skills. Moreover, 37.5% agreed, and only 3.4% showed a disagreeing response.

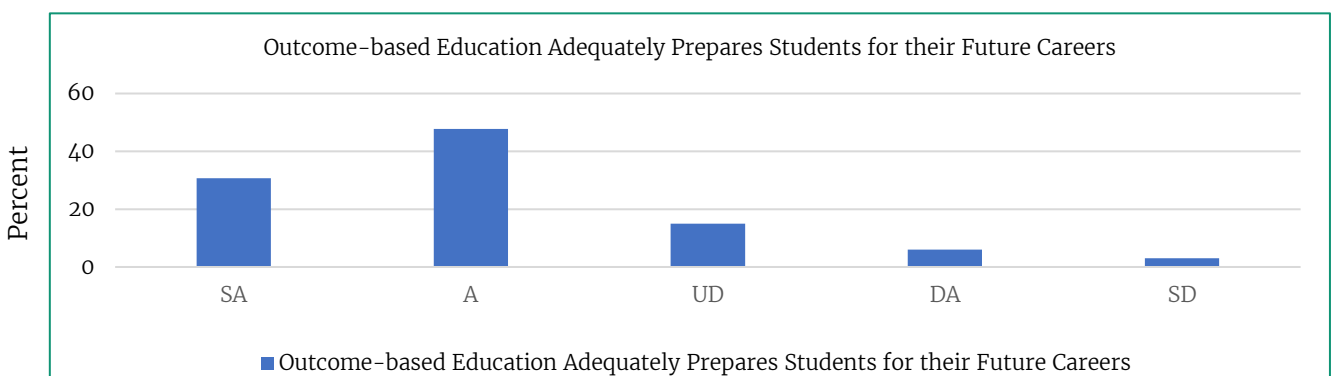
Table 5

Outcome-based education adequately prepares students for their future careers.

Respondent	N	Mean	STD	Eta
Teacher	20	1.85	.75	.824
Student	65	1.94	.85	

The analysis of Table 5 showed the high mean score of teachers (Mean=1.80 and Std=.67); furthermore, the students also had a high mean score (Mean=1.74 and Std=.94), which indicated the effectiveness of Outcome Based Education. The mutual agreement of students and teachers concerning outcome-based education in educational practices at the university level revealed that Outcome-based education adequately prepares students for their future careers.

Table 5





The above graph shows that 30.70% of participants (University teachers and students) strongly agreed with the statement that Outcome-based education adequately prepares students for their future careers. Moreover, 47.7% agreed, and only 2.3% showed a disagreeing response.

Table 6

Comparison of University Teachers and Students about the Role of outcome-based education in educational practices

Respondent	n	df	Mean	Std	t	p-value	MD	Effect size (Hedges)
Teacher	20	83	8.75	2.92	1.466	0.91	1.12	2.978
Student	65		9.86	2.93				

*Significant *t*-table value= 0.678

Table 6 shows the difference between teachers' and students' skills regarding outcome-based education. The mean score of university teachers was 8.75 and the standard deviation was 2.92. On the other hand, the University students' mean score was 9.86, and the standard deviation was 2.93. The High mean score showed that students were more confident than the teachers towards the role of outcome-based education in educational practices. Moreover, the *t*-test results supported the results and showed the significance of teaching practices during outcome-based education. The *t*-table value was found to be 1.466, and the pooled standard deviation and a correction factor were used in the Hedges' correction, which yielded an effect size of 2.978. therefore, the null hypothesis that there is no significant difference between the perspectives of educators and learners about the role of outcome-based education in educational practices was rejected.

Findings

The study's findings showed that teachers had a mean score of 1.60, while students scored an average of 2.15 concerning the statement that Outcome-based education enhances students' critical thinking skills. Consequently, the conclusion drawn was that both teachers and students at the university level agreed on the positive side of the integration of outcome-based education in enhancing students' critical thinking abilities. Moreover, the null hypothesis was rejected.

The findings of the study revealed that the mean among teachers was 1.60, whereas among students, it was 2.06, concerning the statement that 'Outcome-based education improves students' ability to apply knowledge in real-world scenarios.' Therefore, the conclusion was drawn that both teachers and students agree that Outcome-based education enhances students' capacity to apply knowledge in real-world scenarios at the university level.

The findings of the study revealed that the mean of teachers was 1.90 and students' mean was 1.97 regarding the statement that outcome-based education promotes students' engagement and motivation. Therefore, it was concluded that the teachers and students were positive about Outcome-based education in educational practices. Therefore, it was concluded that it promotes the students' engagement and motivation at the university level.

The study's findings indicated that teachers averaged a score of 1.90, while students scored slightly higher at 1.97 regarding the statement, "Outcome-based education fosters the acquisition of crucial employability skills." Consequently, the conclusion drawn was a consensus between teachers and students affirming that Outcome-based education indeed enhances the cultivation of essential employability skills within the university setting.

The findings of the study revealed that the mean of teachers was 1.85 and students' mean was 1.94, regarding the statement that Outcome-based education adequately prepares students for their future careers. Therefore, it was concluded that the teachers' and students' outcome-based education adequately prepares students for their future careers at the university level. The null hypothesis was rejected.

The analysis highlights a noticeable disparity in educational practices attributed to outcome-based education between teachers and students. Teachers demonstrate an average skill level of 8.75, with a standard deviation of 2.92, while students exhibit a higher mean of 9.86, with a comparable standard

deviation of 2.93. Both averages exceed the anticipated range, indicating a high level of proficiency regarding outcome-based education among participants, both teachers and students.

The conclusions were further substantiated by the *t*-test results, which generated significant results. The *t*-table value 0.678 was significant at 0.05, (1.466), and the Hedges effect size, calculated as 2.978 using Hedges' correction based on the pooled standard deviation alongside a correction factor, underscores the substantial difference in the perceptions about the role of outcome-based education into educational activities was significant and the null hypothesis was rejected.

Conclusions

It was concluded from the above statistical analysis and findings that the study of the positive role of the impact of Outcome-Based Education (OBE) on educational activities at the University level De Guzman, Edaño, & Umayan, (2017) outcome based education can enhance the educational system of a nation. It was correspondingly concluded that the applicability of modern educational strategies can provide a platform for a new generation to apply the knowledge in practical life and make sound decisions about their future goals. As the results of the study showed that both university educators and students were on the same page regarding the positive role of outcome-based education, it was further concluded that these insights could contribute significantly to the ongoing discourse on educational methodologies, advocating for sustained implementation and refinement. The shared perspectives on critical thinking enhancement, practical knowledge application, employability skill development, and career preparation collectively highlight the major role of OBE in fostering holistic learning experiences and educational activities at the university level.

Recommendations

On the basis of the above findings it was recommended that:

1. To conduct future endeavours in enhancing Outcome Based Education in Pakistan by acknowledging its potential to shape a transformative educational landscape.
2. The outcome education should be applied from the basic education, that is, the Elementary level, for more positive results and to prepare the students for real-world challenges.
3. It was observed that outcome-based education was adopted by only the Pakistan Engineering Council; therefore, it was suggested that outcome-based education should be essential for all educational disciplines in Pakistan.

References

- Alimyar, Z. (2020). Outcome-based education training workshops: A study to explore their effectiveness on Afghan EFL instructors' teaching methods. *International Journal of Education and Culture*, 9(2), 18-30.
- Asim, H. M., Vaz, A., Ahmed, A., & Sadiq, S. (2021). A review on outcome based education and factors that impact student learning outcomes in tertiary education system. *International Education Studies*, 14(2), 11. <https://doi.org/10.5539/ies.v14n2p1>
- Avalos, B. (2013). *Outcome-based education: Implementation of OBE at universities*. *Language in India* 7, 457-471.
- Bousslama, F., Lansari, A., Al-Rawi, A. M. & Abonamah, A. A. (2003). A Novel Outcome-Based Educational Model and its Effect on Student Learning, Curriculum Development, and Assessment. *Journal of Information Technology Education: Research*, 2(1), 203-214. Informing Science Institute. <https://www.learntechlib.org/p/111473/>.
- Creswell, J. D., Dutcher, J. M., Klein, W. M., Harris, P. R., & Levine, J. M. (2013). Self-affirmation improves problem-solving under stress. *PloS one*, 8(5), e62593.
- Creswell, R. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. USA: SAGE Publications.
- Davis, M. H. (2003). Outcome-based education. *Journal of Veterinary Medical Education*, 30(3), 258-263. <https://doi.org/10.3138/jvme.30.3.258>



- De Guzman, M. F. D., Edaña, D. C., & Umayan, Z. D. (2017). Understanding the Essence of the Outcomes-Based Education (OBE) and Knowledge of its Implementation in a Technological University in the Philippines. *Asia Pacific Journal of Multidisciplinary Research*, 5(4), 64-71.
- Gay, L. R., & Pearson. (2012). *E Book Educational Research*. <https://anyflip.com/nahf/xzjw/basic/201-250>.
- Harden, R. (2002). Developments in outcome-based education. *Medical Teacher*, 24(2), 117-120. <https://doi.org/10.1080/014215902201206669>
- Kaliannan, M., & Chandran, S. D. (2012). Empowering students through outcome-based education (OBE). *Research in Education*, 87(1), 50-63. <https://doi.org/10.7227/rie.87.1.4>
- Katawazai, R. (2021). Implementing outcome-based education and student-centered learning in Afghan public universities: the current practices and challenges. *Heliyon*, 7(5).
- Lin, T. C. (2004). The role of higher education in economic development: an empirical study of Taiwan case. *Journal of Asian Economics*, 15(2), 355-371. <https://doi.org/10.1016/j.asieco.2004.02.006>.
- Midraj, S. (2018). Outcome-based education (OBE). In: *The TESOL Encyclopedia of English Language Teaching*, 1-7.
- Minaz, M., Tabassum, R., & Idris, M. (2017). An experimental study of the performance of prospective teachers of flipped classroom and non-flipped classroom. *Pakistan Journal of Education*, 34(2), 167-182.
- Mohayidin, M. G., Suandi, T., Mustapha, G., & Konting, M. (2008). Implementation of Outcome-Based Education in Universiti Putra Malaysia: A Focus on Students' Learning Outcomes. *International Education Studies*, 1(4), 147-160. <https://doi.org/10.5539/ies.v1n4p147>.
- Orfan, S. N. (2021). *Outcome-based education and student-centered learning*. Tehran, Peshtiban Press.
- Rao, N. J. (2020). Outcome-based education: an outline. *Higher Educat. Future* 7 (1), 5-21. Rao, P.O.R.S., 2015. Outcomes based engineering education - need of the hour. *J. Eng.* 1-13. July 2013.
- Sana, E. A., Roxas, A. B., & Reyes, A. L. T. (2015). Introduction of outcome-based education in Philippine health professions education setting. *Philippine Journal of Health Research and Development*, 19(1), 15.
- Spady, W. G. (1988). Organising for results: the basis of authentic restructuring and reform. *Educ. Leader* 46(2), 4-8.
- Spady, W. G. (1994). *Outcome-Based Education: Critical Issues and Answers*. American Association of School Administrators, 1801 North Moore Street, Arlington, VA 22209 (Stock No. 21-00488; \$18.95 plus postage).
- Von Glasersfeld, E. (2012). A constructivist approach to teaching. In *Constructivism in education* (3-15). Routledge.
- Williamson, M. C. (2000). *A comparative analysis of outcomes based education in Australia and South Africa* (Doctoral dissertation, University of South Africa).
- Willis, S., & Kissane, B. (1995). *Outcome-based education: A review of the literature*. Education Department of Western Australia.
- Woo, Y., Kim, E., & Lim, J. (2017). The impact of education and R&D investment on regional economic growth. *Sustainability*, 9(5), 676. <https://doi.org/10.3390/su9050676>
- Yusuf, F., Shinta, M. R., & Fransisco, S. (2020). The Influence of Training on Employee Performance in PT. Pelni (Persero) Jakarta. *Journal of Research in Business, Economics, and Education*, 2(3), 544-553.