

**An Assessment of BS Programs Operated under the Semester System in Universities of Southern Districts, Khyber Pakhtunkhwa**

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**Abstract**

This study evaluates the Bachelor of Science (BS) programs under the semester system in southern Universities of Khyber Pakhtunkhwa, focusing on learning outcomes, course content, physical facilities, teaching methodologies, and assessment procedures. Using a mixed-method explanatory sequential design, the research first gathered quantitative data through a questionnaire from 210 teachers and 370 students, then collected qualitative data via semi-structured interviews with 38 participants. Reliability of the questionnaire was established at 0.82. Data analysis included descriptive and inferential statistics for quantitative results and thematic analysis for qualitative insights. The study found that the status of BS programs under the semester system in the southern districts' universities of Khyber Pakhtunkhwa was moderately effective regarding learning outcomes, course content, physical facilities, teaching methodologies, and assessment procedures. It is recommended that universities enhance the quality of their BS programs under the semester system to better prepare for future challenges

**Introduction**

Globalization has transformed the world, bringing both competencies and challenges across various aspects of life. Consequently, higher education plays a vital role in the socio-economic development of a nation. Stakeholders recognize the importance of higher education in equipping individuals with the necessary skills to thrive in this globalized environment. It not only enlightens individuals to contribute positively to society and bolster socio-economic development but also cultivates the abilities and skills needed to compete on an international level. Therefore, it is essential for a state to provide quality education to its citizens (Ahmad, 2011). A study aimed to keep the BS program on track under the semester system at Gomal University and its affiliated colleges. Its results reveal a dire and urgent need for a continuous professional development program to be launched for the faculty members of Gomal University and the teaching staff of the affiliated colleges for their professional grooming. The program's quality can be improved by updating the research and teaching skills of the teachers; the teachers may also be trained about the BS program's rules, regulations, and requirements. It is essential to provide training opportunities for faculty members to improve their research, teaching, and assessment skills and keep them up-to-date with the rules, regulations, and prerequisites of the BS program. The recent revisions to the Graduate Policy of Education (GPE) and Undergraduate Policy (UGP) have

created a need for workshops to update university faculty members and colleges. (Khan, A., Shah, S. A., Ishaq, A., & Nadeem, Q. M. 2024). In line with its vision for reforms in higher education, the Higher Education Commission (HEC) of Pakistan has adapted the instructional process in universities from the traditional Annual System to an innovative Semester System (Jadoon et al., 2008). Since the establishment of the HEC in 2002, various Bachelor of Science (BS) programs under the Semester System have been initiated in universities to meet both local and international demands. All BS programs have been recognized by the HEC as equivalent to Master's Degree programs on an international scale. According to Jadoon et al. (2008), the Semester System employs frequent assessment practices—including tests, assignments, presentations, and quizzes—that actively engage graduates in the teaching-learning process and help them identify and address their misunderstandings. Moreover, this system fosters a sense of mutual confidence, understanding, and collaboration among students and faculty, making the learning environment more energetic, dynamic, and enthusiastic (Bidani, 2010). Higher education institutions in Pakistan are following the guidelines for the Semester System to implement BS programs effectively. However, according to the HEC, institutions faced challenges in implementing the program before standardized rules were formulated. In 2006, to address this issue, the HEC established clear guidelines for the effective implementation of the Semester System. Despite being an innovative approach, the Semester System has some weaknesses in its execution. It often lacks consistency, can be expensive, and poses challenges in achieving an in-depth understanding of concepts (Cates and Monk, 2010). Fallows and Symon (2000) identified several flaws in the Semester System, including bias, potential objectivity in evaluation practices, and a tendency for students to guess answers to multiple-choice questions instead of fully grasping the material. Furthermore, many graduates who achieve distinctions under the Semester Scheme struggle to pass various job recruitment exams such as the NTS, FTS, and ETEA, raising questions about the program's effectiveness. As a result, there is a pressing need for comprehensive evaluation and discussion regarding the program's usefulness and successful implementation. This study aims to assess the status of the BS Program under the Semester System in the southern districts of Khyber Pakhtunkhwa, Pakistan, by analyzing various factors including physical facilities, teaching methodologies, course content, assessment procedures, and learning outcomes.

### **Research Gap**

During the past several researches have been made to highlight the educational practices i.e. learning outcomes, student academic achievements, teaching skills and performances (Darling-Hammond, 2008). Educationists are trying to move the educational practices from teacher centered to student centered approach and quality education (Shaukat and Chowdhury, 2021). The BS Programs under the Semester System were initiated in the universities to meet the 21st century challenges. It was a significant step taken toward the quality education by the Government of Pakistan. Contrary to this some of the researchers perceived some drawbacks in the Semester Scheme i.e. biasedness in assessment, lack of making concepts and thorough understanding of subject matter knowledge (Malik, Avas, & Khanam, 2010). The current practices of the Semester system aren't meeting the international standards (Cates & Monk 2010). Likewise, Yousaf, and Hashim (2012), opine that, Semester system is more expensive, time taking and having lack of objectivity, teachers are more dominant and students are more submissive for getting good positions. In addition, the above drawbacks, according to the best of the investigator's understanding there is a lack of researches after going through the 'Literature Review' in this vast area. Hence, to realize this gap in the literature this research titled as "An Evaluation of BS Programs under the Semester System in the southern districts universities of Khyber Pakhtunkhwa Pakistan" was launched to evaluate the effectiveness of BS Programs under the Semester Scheme

on the ground reality basis. Moreover, it was worked to rationalize the truths through the study outcomes regarding Semester Scheme through applying the Mix-Method Explanatory Sequential Design to fill the procedural gap occurs in this area. Hence, findings of the study connected to assessment, teaching methodologies, physical facilities, course content and learning outcomes of BS Program under Semester System will be substantial to the Higher Education Commission and policy makers and may improve the existing structure of the Scheme.

### **Statement of the Problem**

The quality of higher education in Pakistan has been a concern for some time (Shah, 2010). In response to this issue, the government has been working to improve the quality of higher education. As part of this effort, universities have introduced Bachelor of Science (BS) programs under the Semester System, aiming to provide high-quality education and prepare students for future challenges. However, there have been perceived shortcomings in the effective implementation of the Semester Scheme (Fallows and Symon, 2000; Cates and Monk, 2010). This study aims to investigate the effectiveness of the BS programs under the Semester Scheme in the universities of the southern districts of Khyber Pakhtunkhwa, Pakistan. The study seeks to illuminate how these BS programs can enhance productivity, evaluate students, and impact student performance. Evaluation is a crucial process for assessing the strengths of any event or program. Therefore, this study is titled “An Evaluation of the BS Programs under the Semester System in the Southern Districts Universities of Khyber Pakhtunkhwa, Pakistan.”

### **Objectives of the Study:**

The study aims to evaluate the fundamental factors of the BS programs offered under the Semester System, specifically focusing on learning outcomes, course content, physical facilities, teaching methodologies, and assessment procedures in the southern district universities of Khyber Pakhtunkhwa.

### **Research Questions:**

What are the perceptions of Heads of Departments (HODs), faculty members, and students regarding the effectiveness of BS programs under the Semester System? This question is central to our study as it seeks insights from key stakeholders in the education system regarding the effectiveness of the Semester System.

### **Hypotheses of the Study:**

The perceptions of stakeholders regarding the factors of the BS program under the Semester System—namely, learning outcomes, course content, physical facilities, teaching methodologies, and assessment procedures—are significant.

### **Literature Review**

Higher education refers to advanced levels of education, encompassing all post-secondary degree programs (World Bank, 2000). It plays a crucial role in the cultural, economic, educational, and overall development of a nation (Isani & Virk, 2004). In the 21st century, higher education has gained immense importance. Davies (2000) noted that during this time, nations, languages, and cultures are experiencing a sense of limitless possibilities. Due to globalization, there is a growing need for observable innovations and changes in the advancement of higher education institutions (Yang, 2004). According to Isani and Virk (2005), higher education in Pakistan is currently unable to meet established targets. The sector is facing various challenges that hinder the performance of universities. Additionally, politics and limited resources are significant obstacles to delivering quality higher education (Ibid, 2005). In light of these challenges at the higher education level, the

government should focus on improving the quality of higher education (Iqbal, 2004). This improvement is essential for higher education institutions to produce productive citizens capable of meeting both domestic and international demands amid the evolving landscape of global higher education. This study provides an update on factors influencing educational outcomes, focusing on time management and course load. It emphasizes the need for practical, skills-based learning to prepare students for real-world challenges and highlights the importance of treating students fairly to create a supportive learning environment. Additionally, the study points out the necessity of enhanced teacher engagement and teaching quality, which significantly affect students' academic experiences. It examines the interplay between student support services, available resources, course structure and flexibility, and extracurricular opportunities. By analyzing these interconnected factors, the research aims to offer insights for improving educational practices. It serves as a resource for Gomal University's management to refine its Bachelor of Science (BS) program. The findings identify weaknesses within the current program, providing targeted strategies for enhancement, which will benefit both students and the academic community (Khan, A. N., Khan, Z., & Shah, S. A. (2024).

### **BS (Bachelor of Studies) Program.**

Recent trends in educational systems have been altered promptly globally. Thus, the speedy developments in the field of education have encouraged reforms in the curriculum for "higher education" in Pakistan (Haider, 2008). Pakistan has focused on amendments to the higher education curriculum to eradicate irregularities. Consequently, BS programs under the semester scheme were introduced in 2002 in the higher education institutions in Pakistan, with the recommendations of NCRC and HEC. The HEC recognized the BS programs as global-level master's degree programs, comprised of '8' semesters, i.e., spring and fall semesters during an academic year. Similarly, a semester consists of 16-18 weeks' time. Course weight per Semester is 15 - 18 credit hours, and the total credits (124 to 136) are required for a degree to complete. It combines diverse courses, i.e., central, core, general, and elective. It is actually an advanced scheme launched to prepare citizens to compete and participate globally. Thus, the BS programs play a vital role in assisting graduates in acquiring critical thinking, literary, educational, and humanistic skills (Bahauddin Zakariya University, 2009). Khan, A., Ishaq, A., & Shah, S. A. (2023) conducted a study and it recommends that the university establish a center for continuous professional development to train faculty in curriculum development, teaching techniques, assessment methods, and data analysis. Shoukat and Muhammad (2015) pointed out the challenges of implementing semester-based evaluations in Pakistan, highlighting the need for clear assessment criteria and faculty training. Given that BS/AD programs with semester systems are new, it's vital to inform stakeholders about relevant rules and regulations, and ensure that all affiliated colleges adhere to a unified academic calendar and policies. Investing in staff professional development enhances skills and benefits both students and the institution. Additionally, improving teacher quality and compliance with assessment techniques is essential. that the university establish a center for continuous professional development to provide training in curriculum development, teaching techniques, assessment methods, and data analysis. Shoukat and Muhammad (2015) highlighted challenges in implementing semester-based evaluations in Pakistan, stressing the need for clear assessment criteria, faculty training, and effective monitoring. As BS/AD programs with semester systems are new, it is crucial to inform stakeholders about the relevant rules and regulations. All affiliated colleges should adhere to a unified academic calendar, course outlines, exam dates, and policies. Additionally, improving teacher quality and facilities, as well as ensuring compliance with assessment techniques, is essential. Staff training in curriculum development and seminar awareness for parents and students

about AD admissions is also recommended.

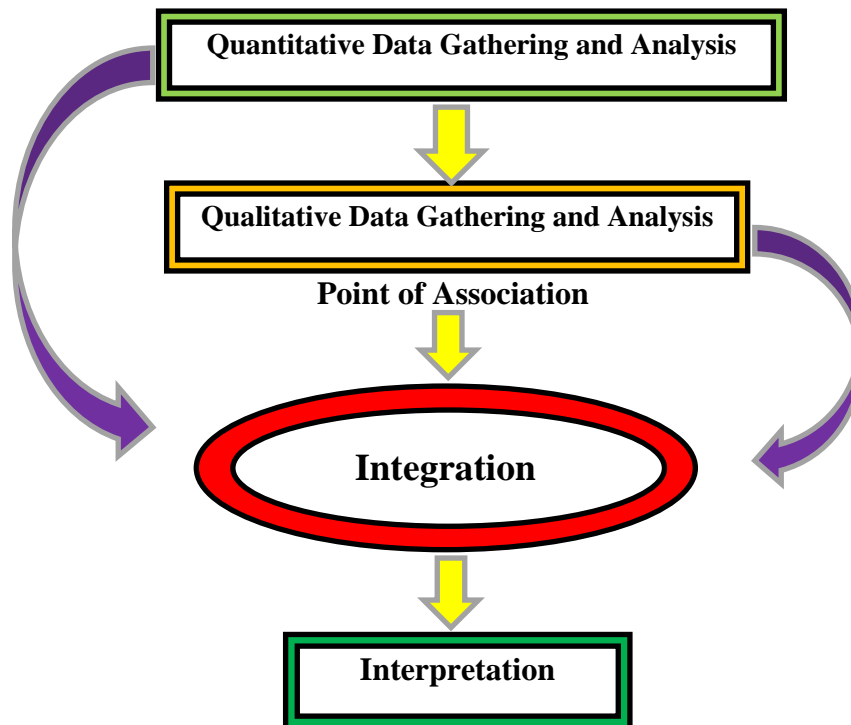
### **Semester System**

The term "Semester" is derived from the word "Memestral," which means six months. Ballantyne (2003) defined a Semester as separating an academic year into two halves of 16-18 weeks. Hence, half of the course content is taught and evaluated in the first half of an academic year, while the remaining half is covered and assessed in the second part. The duration of the '1' year program consists of '2' semesters and the '2' years program consists of '4' semesters. In the Semester System, the academic and non-academic performance of the students is assessed at the end of the Semester. Thus, unceasing assessment processes and activities continue throughout a semester (Daka, 2008). Under the Semester system, the students and teachers create and collaborate, which creates an atmosphere of mutual confidence/understanding between them. Hence, it makes them more enthusiastic, active, and energetic. Furthermore, due to the flexible classroom environment, the students and teachers feel more relaxed and avoid inflexibility (Jadoon et al., 2008). In the Semester system, the workload is distributed, and thus, the students remain easy. Constant assessment processes, i.e., tests, assignments, presentations, and quizzes, help the students build their concepts and correct their slipups (Bidani, 2010). One important characteristic of the Semester scheme is its nonstop activities and timelines until the end of the Semester. The students and faculty members complete the work well in time; otherwise, they may be unable to cover the content within the specified time. Sessional marks define the student's overall performance. Therefore, they stay submissive and attentive during the whole Semester. Hence, continuous assessment is an important feature of the semester system (Shirazi, 2004). As an innovative scheme, the scholars perceived some flaws in the Semester system (Fallows & Symon, 2000), i.e., bias in assigning marks/grades and the inability to assess the student's performance objectively. In this system, students depend on guessing the answers when answering the MCQs rather than making concepts. Similarly, according to Cates and Monk (2010), the prevailing practices of the semester system have irregularities in their execution, i.e., it is costly and complex to accomplish their practices and lack a thorough understanding of topics in the anticipated period. According to some of the research on the semester systems, students have fewer chances to gain an in-depth understanding of concepts (Malik, Avais, & Khanam, 2010). Similarly, Yousaf and Hashim (2012) defined the semester scheme as 16 percent of students not liking it, while 56 percent consider it costly and time-consuming. Both the students and faculty members apprehend the absence of objectivity. In this scheme, educators are dominant, and the learners are forced to be more submissive to receive good marks and grades. Moreover, the faculty members collectively agreed that this scheme could not be run successfully under this system, which lacked the appropriate policy guidelines.

### **Research Methodology**

Research methodology is basically a set of systematic procedures for conducting research, and it is a justification or philosophy for why this specific technique or design was selected for the study (Morrison, 2012). The study used a Mixed-method "Explanatory Sequential Design" with a specific philosophy and an analysis justification in a philosophical paradigm called "Pragmatism" (Bryman, 2006 and Morgan, 2007). In mixed-method studies, questions are responded to using quantitative and qualitative methods (Teddlie & Tashakkori, 2009). Explanatory Sequential Model is beneficial in quantitative research and if a study requires confirmation from different methods, such as "Program Evaluation." Thus, the quantitative data findings generate further questions of a qualitative nature (Creswell Klassen, Plano Clark, and Smith, 2011). As per the model's requirement, the quantitative data were first collected using a valid and reliable

questionnaire and then analyzed. Secondly, the qualitative data were collected using a semi-structured interview and thematic analysis. Moreover, the data were integrated to endorse whether the diverse data sets validate each other (Creswell & Plano Clark, 2007). The figure below clearly demonstrates the process.



**Research Population, Sample & Data Analysis:**

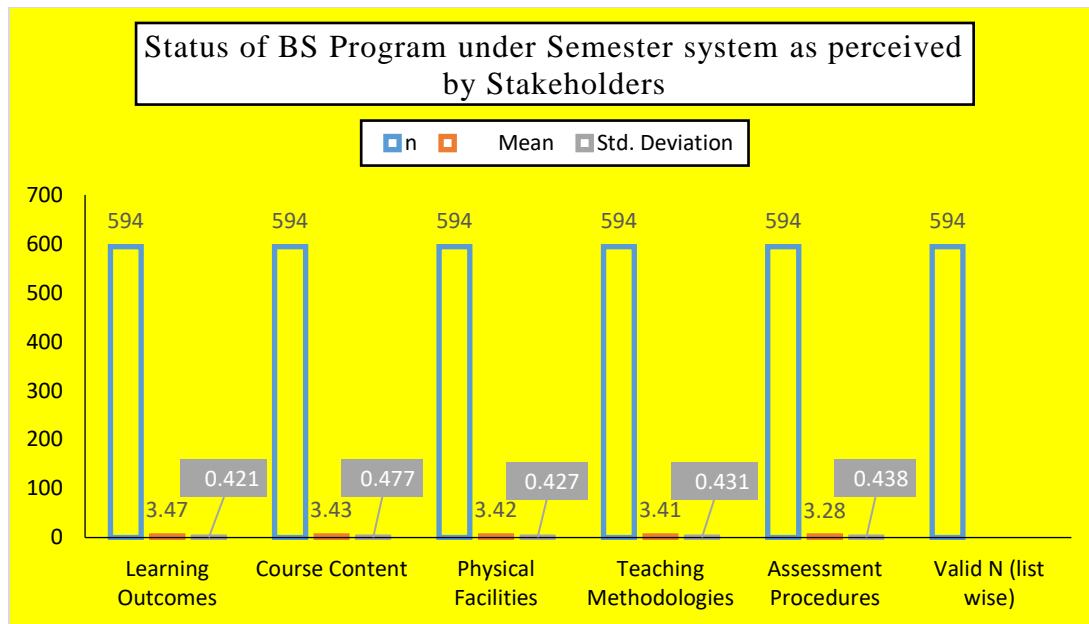
The study population consisted of students, teachers, and Heads of Departments (HODs) from the arts and science faculties of universities in the southern districts of Khyber Pakhtunkhwa. A multistage sampling procedure was employed, utilizing stratified random sampling and simple random sampling techniques for the quantitative data strand. For the qualitative data strand, a saturation point strategy was applied for sample selection. The total population for the study included 61 HODs, 459 teachers, and 9,089 students. Consequently, all 61 HODs were chosen as part of the sample. Additionally, 210 teachers and 370 students were selected based on the sample size table provided by Krejcie and Morgan (1970). In total, 641 participants were included in the quantitative strand of the study. For the qualitative strand, 38 participants were selected until the saturation point was reached.

**Quantitative Data Analysis**

Descriptive statistics were employed for the quantitative strand of the study using SPSS software. Status of BS programs under the Semester system as perceived by Stakeholders.

Variables	N	Mean	Std. Deviation
Learning Outcomes	594	3.47	.421
Course Content	594	3.43	.477
Physical Facilities	594	3.42	.427
Teaching Methodologies	594	3.41	.431
Assessment Procedures	594	3.28	.438
Valid N (list wise)	594		

**Graph presenting Status of BS programs under Semester system as perceived by stakeholders**



The table and graph present the status of BS programs under the Semester System as perceived by key stakeholders, including students, teachers, and Heads of Departments (HODs). The quantitative data was collected from 594 out of a total of 641 respondents from various universities in the southern districts of Khyber Pakhtunkhwa. The mean scores recorded for various aspects were as follows: Learning Outcomes: 3.47 (SD 0.421); Course Content: 3.43 (SD 0.477); Physical Facilities: 3.42 (SD 0.427); Teaching Methodologies: 3.41 (SD 0.431); and Assessment Practices: 3.28 (SD 0.438). These scores indicate that the status of BS programs under the Semester System is moderate within these universities. The statistics suggest that improvements are needed in learning outcomes, course content, physical facilities, teaching methodologies, and assessment practices to align with both local and international standards.

**Qualitative Data Analysis**

The qualitative data was analyzed using variable-wise thematic analysis.

1. Based on respondents’ perceptions, it was found that the semester system meets future needs at a satisfactory level. Students acquire a variety of skills, including mastering key terms, concepts, principles, and specific facts. Additionally, it fosters communication and presentation skills, as well as reflective abilities in students. Stakeholders believe the semester system is effective in achieving satisfactory learning outcomes.
2. According to participants, the course content of the BS program aligns with the national curriculum and meets international standards. It is flexible and caters to different learners' needs. Teachers utilize appropriate methods and techniques to cover the course effectively and within the designated time. Co-curricular activities are regularly conducted, and there is active interaction between teachers and students regarding course completion. While faculty members strive to sufficiently cover course content, the pressure to finish within a specific time frame can hinder students' in-depth understanding of concepts. Overall, the effectiveness of the semester

- system with regard to course content is considered satisfactory by all participants.
3. Regarding physical facilities, respondents indicated that basic amenities such as lecture rooms, multimedia equipment, whiteboards, laboratories, computer labs, and libraries are provided by the universities. While there is a significant emphasis on supplying physical resources to meet international standards and local needs, the lack of adequate financial and physical resources remains a concern due to the universities' poor financial situations. Respondents pointed out that libraries are not sufficiently stocked with required books and that laboratories often lack essential scientific tools and chemicals. Thus, the status of the semester system in terms of physical facilities is considered moderate.
  4. According to stakeholders, faculty members employ various teaching methodologies to enhance the effectiveness of the teaching and learning process. These methodologies include demonstration, activity-based learning, group discussions, and cooperative learning techniques. There is a consensus among stakeholders that student-centered approaches should be prioritized in instructional processes. Faculty members should possess strong professional competencies and utilize innovative teaching methodologies to achieve content objectives and enhance the effectiveness of the semester system. Overall, the status of the semester system with respect to teaching methodologies is regarded as satisfactory according to respondents
  5. According to the respondents, students are assessed continuously through both formative and summative assessment practices. Continuous assessment provides students with well-informed feedback on their performance, allowing them to revisit and improve upon their work. However, the internal assessment practices also raise concerns about potential bias or favoritism in evaluating student performance. Respondents expressed serious concerns regarding cheating and other unfair practices during assessments, which they attributed to teachers' nonchalant attitudes toward the assessment processes. Additionally, some respondents viewed research work as merely a formal requirement rather than a meaningful component of their education. In summary, while the effectiveness of the semester system's assessment policies meets a satisfactory level, the implementation of these assessment practices needs to be more meaningful and effective. For the integration of quantitative and qualitative data findings and their mixed-method interpretation, a sequential mixed-methods approach was adopted to evaluate the effectiveness of BS programs under the semester system at universities in Khyber Pakhtunkhwa, Pakistan. According to this model, quantitative data was collected and analyzed first, followed by separate collection and analysis of qualitative data concerning the issue at hand. The results from both data strands were then converged to cross-validate the findings (Creswell, 2007).

The table below displays the convergence and integration of quantitative and qualitative data, showing that the quantitative results regarding the effectiveness of BS programs under the semester system in Khyber Pakhtunkhwa universities were corroborated by qualitative data. This evaluation covered various aspects, including course content, physical facilities, teaching methodologies, assessment procedures, and learning outcomes of BS programs under the semester system.

**Convergence/Divergence of Quantitative and Qualitative data Results and their Mixed-Method interpretation**

<b>Quantitative Data Strand</b> <b>Results n=594</b> <b>Data Collection</b> <b>Instrument</b> <b>(Questionnaire)</b>	<b>Qualitative Data</b> <b>Strand Results n=38</b> <b>Data Collection</b> <b>Instrument (Interview)</b> <b>Stake-holders (HODs, Faculty)</b>	<b>Decisions</b>
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<b>Stakeholders (HODs, Faculty members and Students)</b>	<b>members and Students)</b>	
<b>Learning Outcomes</b>		
Mean value for Learning Outcomes was 3.47 having SD.421, which reveals that, the status of Learning Outcomes was found moderate in the universities offering BS Program under Semester system in Khyber Pakhtunkhwa. Thus overall BS programs under Semester System found effective in regards to Learning Outcomes.	Keeping in view the perceptions of stake-holders, it was revealed that the effectiveness of BS programs under Semester system in regards to Learning Outcomes was up to the satisfaction level.	Convergence
<b>Course Content</b>		
Mean value for Course Content was 3.43, with SD.477, which identifies that, the status of Course Content was found moderate in the universities offering BS Program under Semester system. Thus overall the BS programs were found effective in regards to the Course Content.	In light of the respondents' opinions, it was revealed that, the status of effectiveness of BS programs under Semester system in regards to Course Content was satisfactory in the universities however unluckily in the race of covering the syllabus content, the in-depth comprehension of concepts is still a question mark.	Convergence
<b>Physical Facilities</b>		
The mean value for Physical Facilities was 3.42, with an SD value of 427, indicating a moderate status of Physical Facilities in the universities offering BS programs.	This was further supported by the participants' interpretations, which also found the status of BS programs under the Semester system to be moderate in terms of Physical facilities. This reiteration reinforces the key takeaway for the audience	Convergence
<b>Teaching Methodologies</b>		
The mean value for Teaching Methodologies was 3.41, with a standard deviation (SD) of 0.431. This indicates that the status of Teaching Methodologies in the universities offering BS programs is moderate.	Overall, the BS programs under the Semester System were found to be effective in terms of Teaching Methodologies. According to the opinions of the respondents during interviews, the status of BS programs under the Semester System regarding Teaching Methodologies met their satisfaction levels.	Convergence

<b>Assessment Procedures</b>		
The mean value for Assessment Procedures was 3.28, with a standard deviation of 0.438, indicating that the status of Assessment Procedures was moderate. Overall, the BS programs under the Semester System were found to be effective concerning Assessment Procedures.	Based on the interviewee's observations, it was concluded that the effectiveness of the BS programs under the Semester System in terms of assessment policies met the satisfaction level. However, there is still a need for improvement in the implementation of assessment procedures to make them more effective.	Convergence

The table presents a comparative analysis of the quantitative and qualitative components of the study. A Mixed Method Explanatory Sequential Design was utilized, whereby quantitative and qualitative data were collected and analyzed sequentially before being merged during interpretation. The joint display of the data revealed a convergence in both sets regarding the effectiveness of BS programs under the semester system, specifically in terms of Learning Outcomes, Course Content, Physical Facilities, Teaching Methodologies, and Assessment Procedures. Consequently, the quantitative results were validated by the qualitative findings, as many participants expressed observations that aligned with the quantitative data analysis. Thus, the Mixed Method Explanatory Sequential Design effectively justifies the methodological rationale of validating one data strand by another.

### **Discussion:**

The study reveals that the status of BS programs under the semester system in the southern districts' universities of Khyber Pakhtunkhwa was moderately effective regarding learning outcomes, course content, physical facilities, teaching methodologies, and assessment procedures. It is recommended that universities enhance the quality of their BS programs under the semester system, as this system plays a crucial role in the students' learning experience. Doing so will not only better prepare them for future challenges but also significantly improve the overall educational experience for students. The studies conducted by Khan, A. N., Khan, Z., & Shah, S. A. (2024), Khan, A., Ishaq, A., & Shah, S. A. (2023) and Khan, A., Shah, S. A., Ishaq, A., & Nadeem, Q. M. (2024) also recommend strengthening the capacity of teaching faculty and infrastructure to keep the BS program on the right track, achieve maximum output and to do justice with the semester system in actual letter and spirit. Vieten, D., Reher, A., & Gross, I. (2024) support a design and evaluation framework for a semester-long course on scientific literature. The e-learning environment enhances usability with a structured overview and encourages optimal motivation through support for autonomy and active participation. Students can interact with teachers in hybrid formats and select their research topics, allowing flexibility. The course focuses on Artificial Neural Networks to strengthen interdisciplinary ties. To gather feedback, we use a teaching analysis poll to identify learning factors, followed by a questionnaire assessing competency development. Shaukat, S., & Chowdhury, R. (2021) wrote that Australia and Pakistan are committed to improving teacher education standards. Though their reform efforts occur within different cultural contexts, comparative studies can reveal valuable insights into integrating professional standards into teacher education curricula. While it is oversimplified to believe that merging standards with content alone prepares teachers for classroom challenges, providing

students with clear professional goals is crucial in enhancing teaching quality and elevating the profession's status.

### **Conclusions (Variables Wise)**

It was concluded that all stakeholders (students, teachers, and HODs) perceived the BS program under the semester system as meeting future demands satisfactorily. Graduates develop various skills and capabilities, such as acquiring key concepts, terms, principles, and specific facts. The program also fosters the presentation and communication skills of graduates while enhancing their critical thinking and problem-solving abilities. Additionally, it provides an educational support base for the state. Therefore, according to all stakeholders, the effectiveness of the BS program under the semester scheme concerning Learning Outcomes was found to be moderate. Findings indicated that all stakeholders (students, faculty members, and HODs) agreed that the course content of BS programs is aligned with the national curriculum and meets international standards. The content is innovative, flexible, and tailored to the needs of diverse students. Faculty members employ appropriate techniques and methods to deliver the content efficiently and in a timely manner. Co-curricular activities are actively implemented in universities, fostering an understanding among teachers and students regarding course content. However, the urgency of covering the syllabus within the specified timeframe sometimes hampers comprehensive understanding. Therefore, stakeholders agreed that the effectiveness of the BS program under the semester system regarding Course Content was also found to be moderate. It was revealed that all stakeholders, including students, teachers, and HODs, agreed that essential physical facilities, such as whiteboards, lecture rooms, multimedia resources, science labs, computer labs, and libraries, are provided in the universities. However, there is a significant need for enhanced physical facilities in these institutions to meet both global standards and local needs. Unfortunately, the availability of necessary physical and financial resources remains a challenge due to the universities' weak economic conditions. Respondents expressed concerns over inadequate library resources, lacking the necessary books and materials, and pointed out a scarcity of chemicals and scientific apparatuses in the laboratories. Consequently, the effectiveness of the BS program under the semester scheme concerning Physical Facilities was rated as moderate. In addition, faculty members use a variety of instructional methods to make the teaching process more dynamic and purposeful. These strategies include demonstrations, group discussions, activity-based instruction, and cooperative learning techniques. There was consensus among stakeholders that student-centered methodologies should be adopted during instruction. Educators need to be proficient and equipped with strong instructional competencies, utilizing diverse teaching methods to achieve course objectives and enhance the effectiveness of the BS program under the semester system concerning Teaching Methods. Thus, the effectiveness of the BS program in universities regarding Teaching Methods was also deemed moderate by all stakeholders: students, faculty members, and HODs. It was found that students in BS programs are continually assessed through formative assessments. Graduates receive timely feedback on their progress, enabling them to reevaluate their performance. However, the internal assessment procedures may lead to biases and favoritism in evaluating students' performance. Participants expressed serious concerns about cheating during exams, which they attributed to a lack of seriousness among teachers regarding assessment practices. Additionally, research activities appear to be merely a formality to meet requirements. Overall, stakeholders believe that the effectiveness of BS programs under the semester system concerning assessment procedures is moderate in the universities offering these programs.

### **Recommendations**

The findings of the research study indicate that the status of the Bachelor of Science (BS) program

under the semester system regarding learning outcomes is moderate at the universities offering these programs. It is recommended that universities strive to enhance the quality of their BS programs related to learning outcomes. The results also show that the course content of BS programs under the semester system is moderately satisfactory. Therefore, universities should work on improving the course content to better encourage creativity and problem-solving skills among graduates while effectively linking theory to practice. This approach will better prepare graduates for their professional careers. Additionally, the study found that the physical facilities available in universities offering BS programs under the semester system are not adequately equipped, especially in science disciplines. To create a more interactive and productive instructional process, it is recommended that universities provide necessary facilities, such as science labs, computer labs, audio-visual aids, libraries, multimedia resources, and internet services. Moreover, financial support from the Higher Education Commission (HEC) and the government should be sought to enhance the effectiveness of BS programs. Teachers should utilize modern instructional strategies and pay close attention to the curriculum content. They should also integrate relevant information and communication technologies into the teaching and learning process to meet instructional standards. The results indicate that the assessment procedures for BS programs under the semester system are also rated as moderate. Hence, it is recommended that universities work to improve these assessment procedures to ensure they align with course objectives and accurately reflect the content. Furthermore, the research practices at these universities appear to be largely formalities. It is recommended that these practices be made more meaningful and relevant to foster a stronger research culture within universities.

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