

Students' Perceptions of Formative and Summative Assessment of Classroom Instruction at the College Level

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Abstract

Classroom assessment plays a crucial role in the educational process as it helps to determine students' learning, identify areas of weakness and strengths, and guide teachers in developing effective classroom assessment techniques. This study explored students' perceptions of formative and summative assessment at the college level in Lahore City, Pakistan. The study employed a quantitative approach, using a questionnaire-based survey to gather primary data from 330 college students (1st year and 2nd year) using a convenience sampling technique. The results showed that male students have a significantly lower incidence rate of negative perceptions of formative and summative assessment than female students (AIRR = 0.394, 95% CI: 0.260-0.597, $p < 0.00$). However, no significant difference was found between private and public institutions (AIRR = 1.213, 95% CI: 0.795-1.851, $p = 0.37$). The study has implications for educational stakeholders, including policymakers, administrators, and instructors, who might benefit from the findings to improve assessment procedures in classroom instruction. Improving classroom strategies will also help in developing students' interest in learning.

Keywords: Students' perceptions, Formative assessment, Summative assessment, College level

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Introduction

Formative and summative assessments are fundamental in the assessment and promotion of learning. Interim assessments, like formative assessments, are offered in the process of teaching and learning with the view of getting immediate feedback, thus the need to make varied decisions during lessons. However, formative assessments often given during the course refer to tests at the end of a learning cycle to evaluate the student's general performance. The two types of assessment have something unique to offer concerning academic success since they impact how the students perceive the learning environment.

The term "classroom assessment" is a process teachers use to assess student learning through various assessment techniques for educational purposes (Cowie & Harrison, 2024). According to Mustamin (2024), classroom assessment is when teachers gather evidence of student learning to understand their strengths and weaknesses and help students improve their learning. Class assessment is considered an essential part of the teaching and learning process because it assists in informing both teachers and students on how to improve their methods and achieve better learning outcomes (Azam & Shaheen, 2022; Monteiro et al., 2021; Kyaruzi et al., 2019). According to Nylk & Diamant (2023), summative assessment is a form of evaluation that usually occurs in numerical form at the end of any study program. In contrast, formative assessment is an ongoing process of assessment in which teachers provide feedback in qualitative and quantitative forms. Formative and summative assessments help determine a student's current performance in their classroom by comparing their progress to their peers (Malau-Aduli et al., 2019).

Based on existing literature, formative and summative assessments are considered a dynamic process in which instructors facilitate students' progress from what they know to what they can do next by providing them with qualitative and quantitative feedback (Pereira et al., 2022). Formative assessment is considered a dynamic process of using assessment to inform subsequent learning. In contrast, a summative assessment is usually a formal exam or instrument that measures students' learning (Manzoor et al., 2023). These assessment techniques help teachers to assess students' learning and behavior in the classroom using different rubrics (Ghozali, & Tyas, 2022; Ogange et al., 2018).

Classroom assessment is a vital part of the education process, and students' perspectives on the assessment process are crucial in determining its effectiveness. As Jones and Oh (2024) pointed out, students view formative assessment positively because they appreciate its

role in improving their comprehension and making it easier to correct themselves. Furthermore, the learning environment is conducive to experiments and growth because of the less stressful nature of formative assessments than high-stakes summative assessments (Sharofova & Aminova, 2024; Mastagli et al., 2020). In contrast, students frequently view summative assessments as an opportunity to demonstrate their acquired knowledge and skills, inspiring them to perform well (Veugen et al., 2021). However, Shah et al. (2023) research has statistically proved that the high stakes involved in these exams can lead to severe tension and anxiety. The limited opportunities for feedback and the fear of failure might hurt the learning process. Students frequently say they would like possibilities for growth and more constructive criticism than a verdict (Robins et al., 2020; Mastagli et al., 2020; Monteiro et al., 2021).

Based on existing literature, formative and summative assessments are considered dynamic processes in which instructors facilitate students' progress from what they know to what they can do next by providing them with qualitative and quantitative feedback (Pereira et al., 2022). In another study, Pan (2020) indicated that providing explicit assessment procedures can significantly benefit students' learning. According to Lim (2019), it has a more significant positive impact on students' academic achievement than when the instructor solely controls these activities.

Students prioritize timely feedback and formative assessments for improved performance (Dreshaj, 2024; Jeri, 2023; Kyaruzi et al., 2019). They prefer well-defined evaluation criteria in summative assessments, which reduces anxiety and enhances control over learning (Manzoor et al., 2023). Students prefer summative tests with explicit criteria and use different assessment methods to consider learning styles in final assessments. Coherent and unbiased assessments are crucial, emphasizing fairness and transparency in students' evaluations (Riese & Stenbom, 2023; Periasamy & Alias, 2022). Students' preferences for summative and formative assessments are intricate and context-specific based on feedback, assessment techniques, fairness, and stakes (Suzanne McCallum et al., 2021). Teachers may use this knowledge to develop assessment strategies matching the students' needs and learning objectives. To foster effective learning environments and support student success, a balance between formative and summative assessments needs to be struck (Hilden et al., 2022).

This research explores students' perceptions of formative and summative assessments, considering gender, institution type, and monthly household income. The study seeks to understand students' experiences and preferences to provide an individualized and inclusive educational

approach. Our study pursues the following research questions: (1) What are the students' perceptions of strengths and flaws concerning formative and summative assessment in the classroom at the college level? (2) Which demographic characteristics of students, such as age, gender, and monthly household income, are associated with positive and negative perceptions concerning formative and summative assessment at the college level?

Research Methodology

Research Design and Sampling

The research study used a quantitative cross-sectional survey design for primary data collection. The target population comprises 771 colleges in Lahore, focusing on first- and second-year students. In the first stage, colleges were treated as strata to ensure representation from 11 institutions—5 public and six private colleges. In the second stage, simple random sampling was employed, with probabilities proportionate to the population of college students, ensuring a representative sample of 330 students from each selected college. The population and sample size were selected to ensure diversity in representation from 771 colleges of Lahore. Both stratified and random sampling reduce bias, balancing public and private institutions.

Research instrument

This study measured college students' perceptions of formative and summative assessment in classroom instruction using a structured questionnaire consisting of a five-point Likert scale: strongly agree, agree, neutral, disagree, and strongly disagree. The questionnaire included demographic information and 20 statements related to students' perceptions. The reliability coefficient was 0.931, with a score of 0.872 for positive perceptions and 0.843 for negative ones. The validity of the research instrument was ensured through face-to-face and content analysis.

Data collection Technique

The students were contacted with the consent of their college heads before performing data collection for this study. Participants were asked to complete the survey by informing them of the approximate 20-30 minutes time. The researchers collected the questionnaire themselves. The students' roll numbers were used to merge the performance data with the surveys.

Measures and Variable

The dependent variables were measured through 20 statements about students' perceptions (Positive/Negative) of the formative and summative assessment in the classroom. The independent variables were the student's demographic information, such as gender, type of institution, and monthly household income (shown in Table 2). On the Likert scale, the responses were strongly agreed (5), agreed (4), neutral (3), disagreed (2), and strongly disagreed (1).

Data Analysis

All analyses were conducted using SPSS Statistics for Windows version 25.0. The authors developed a codebook for each question to calculate and identify the variables. To assess bivariate associations of factors associated with students' perceptions about strengths and flaws concerning formative and summative assessment in the classroom, we conducted bivariate analyses of the association using Somer's D. To perform multivariable analysis of students' demographic characteristics (e.g., gender, type of institution, monthly household income, etc.) associated with positive and negative perceptions of formative and summative assessment; we performed four separate Poisson regression models. Before the Poisson regression, we also computed descriptive statistics of demographic characteristics such as percentages and frequencies.

Results

Table 1 presents the frequency distribution of the study respondents by gender, type of institution, and monthly household income. The percentage of male respondents was 50.9%, and the percentage of female respondents was 49.1%. 54.5% of the respondents were from public institutions, and 45.5% were from private institutions. However, most study participants' monthly household income was 49.1%, and only 3.9% stated they were unaware or did not want to report their monthly household income.

Table 1

Descriptive Statistics for the Demographic Characteristics of the Students

Characteristics of Respondents	Frequency	Percentage
Gender		
Men	168	50.9%
Women	162	49.1%
Institute Type		
Public	180	54.5%
Private	150	45.5%
Monthly household income		
Less than rupees 30,000	17	5.2%
Rs. 30,000 - 49,000	52	15.8%
Rs. 50,000 - 79,000	38	11.5%
Rs. 80,000 - 99,000	162	49.1%
Rs. 100,000 or more	48	14.5%
I do not know	13	3.9%

Our **bivariate analysis** showed the impact of students' demographic characteristics on students' perceptions of formative assessment. Based on the table, there is a statistically significant association between monthly household income and the feeling that "The feedback I receive from formative assessments is often generic and not very helpful" ($P < 0.008$). There is also a statistically significant impact of gender and students' perception that "I do not always understand the purpose of formative assessments or how they relate to my learning" ($P < 0.002$). A significantly higher proportion of students had a negative perception of "It is frustrating when formative assessment tasks seem disconnected from the subject matter" ($p < 0.005$); 71 percent of students strongly agree/agree, and 12 percent strongly disagree/disagree that formative assessment made them disconnected from the subject matter (Table 2).

Table 3 shows that there is no statistically significant relationship between any of the demographic characteristics and the perception that

summative assessments can be stressful and may lead to test anxiety. However, there is a statistically significant relationship between gender and all three other statements about summative assessment. For example, male students are more likely than female students to feel that the pressure to perform well in summative exams can overshadow the joy of learning ($P < 0.000$). Similarly, male students are more likely than female students to feel that they sometimes feel that the emphasis on final grades in summative assessments hinders their learning experience ($P = 0.003$). There is also a statistically significant relationship between monthly household income and the feeling that it is frustrating when criteria for grading summative assessments seem unclear ($P = 0.438$).

Table 4 shows a statistically significant relationship between gender and the perception that getting constructive feedback from teachers helps students see where they need to focus their efforts ($P < 0.000$). Similarly, there is a statistically significant association between gender and the perception that formative assessments allow students to reflect on their progress and set goals for improvement ($P < 0.023$). A statistically significant relationship exists between gender and the perception that formative assessment activities make learning engaging and interactive ($P < 0.029$). However, there is no statistically significant association between the type of institution or monthly household income and any of the three statements about formative assessment.

Table 5 shows that there is a statistically significant association between gender and feeling that "Summative assessments motivate me to study and take my learning seriously" ($P < 0.001$). Male students are likelier than female students to feel motivated by summative assessments. There is also a statistically significant relationship between monthly household income and the feeling that "Summative exams help me understand my strengths and weaknesses in the subject" ($P < 0.001$). Students from households earning between Rs. 50,000 – 79,000 are more likely to feel that summative exams help them understand their strengths and weaknesses in the subject.

Table 2:

Students' Negative perceptions of formative Assessment by Demographic Characteristics

Demographic Characteristics		strongly Disagree/Disagree	Neutral	Strongly Agree/Agree	P (Chi-square)
Sometimes, formative assessments feel like extra work, and I do not see their value.					
Gender	Male	4.0%	17.9%	78.0%	0.169
	Female	1.3%	14.0%	84.7%	
Type of Institution	Private	3.6%	16.4%	80.0%	0.583
	Public	1.8%	15.8%	82.4%	
Monthly Household Income	Less than rupees 30,000	0%	17.6%	82.4%	0.511
	Rs. 30,000 – 49,000	1.9%	7.7%	90.4%	
	Rs. 50,000 – 79,000	0%	13.2%	86.8%	
	Rs. 80,000 – 99,000	4.3%	18.5%	77.2%	
	Rs. 100,000 or more	2.1%	20.8%	77.1%	
	I do not know.		7.7%	92.3%	
The feedback I receive from formative assessments is often generic and unhelpful.					
Gender	Male	19.1%	16.8%	64.2%	0.221
	Female	12.1%	18.5%	69.4%	
Type of Institution	Private	17.6%	16.4%	66.1%	0.611
	Public	13.9%	18.8%	67.3%	
Monthly Household Income	Less than rupees 30,000	11.8%	11.8%	76.5%	0.008
	Rs. 30,000 – 49,000	5.8%	13.5%	80.8%	
	Rs. 50,000 – 79,000	18.4%	5.3%	76.3%	
	Rs. 80,000 – 99,000	21.0%	16.7%	62.3%	
	Rs. 100,000 or more	10.4%	31.3%	58.3%	
	I do not know.	7.7%	38.5%	53.8%	
Formative assessments can be stressful, especially when frequent, affecting my overall grade.					
Gender	Male	5.2%	25.4%	69.4%	0.342
	Female	7.0%	19.1%	73.9%	
Type of Institution	Private	7.9%	22.4%	69.7%	0.377
	Public	4.2%	22.4%	73.3%	

Monthly Household Income	Less than rupees 30,000	11.8%	23.5%	64.7%	0.309
	Rs. 30,000 – 49,000	9.6%	19.2%	71.2%	
	Rs. 50,000 – 79,000	10.5%	28.9%	60.5%	
	Rs. 80,000 – 99,000	2.5%	22.8%	74.7%	
	Rs. 100,000 or more	10.4%	20.8%	68.8%	
	I do not know.	0%	15.4%	84.6%	
	I do not always understand the purpose of formative assessments or how they relate to my learning.				
Gender	Male	9.8%	17.9%	72.3%	0.002
	Female	1.3%	14.7%	84.0%	
Type of Institution	Private	6.1%	18.8%	75.2%	0.476
	Public	5.5%	14.0%	80.5%	
Monthly Household Income	Less than rupees 30,000	0%	23.5%	76.5%	0.566
	Rs. 30,000 – 49,000	5.8%	11.5%	82.7%	
	Rs. 50,000 – 79,000	5.3%	23.7%	71.1%	
	Rs. 80,000 – 99,000	8.1%	16.8%	75.2%	
	Rs. 100,000 or more	2.1%	14.6%	83.3%	
	I do not know.	0%	7.7%	92.3%	
	It is frustrating when formative assessment tasks seem disconnected from the subject matter.				
Gender	Male	12.1%	16.8%	71.1%	0.005
	Female	6.4%	7.6%	86.0%	
Type of Institution	Private	8.5%	14.5%	77.0%	0.461
	Public	10.3%	10.3%	79.4%	
Monthly Household Income	Less than rupees 30,000		23.5%	76.5%	
	Rs. 30,000 – 49,000	9.6%	5.8%	84.6%	0.548
	Rs. 50,000 – 79,000	10.5%	15.8%	73.7%	
	Rs. 80,000 – 99,000	11.1%	13.6%	75.3%	
	Rs. 100,000 or more	8.3%	10.4%	81.3%	
	I do not know.		7.7%	92.3%	

Note: The p-values in the bold font indicate significant associations at $p \leq 0.05$.

Table 3:
Students' Negative Perceptions of Summative Assessment by Demographic Characteristics

Demographic Characteristics			strongly Disagree/Disagree	Neutral	Strongly Agree/Agree	P (Chi-square)
Summative assessments can be stressful and may lead to test anxiety.						
Gender	Male		2.3%	9.2%	88.4%	0.853
	Female		3.2%	8.3%	88.5%	
Type of Institution	Private		1.8%	8.5%	89.7%	0.580
Monthly Household Income	Public		3.6%	9.1%	87.3%	0.788
	Less than 30,000 rupees		5.9%	17.6%	76.5%	
	Rs. 30,000 – 49,000		1.9%	7.7%	90.4%	
	Rs. 50,000 – 79,000		0%	13.2%	86.8%	
	Rs. 80,000 – 99,000		3.1%	6.8%	90.1%	
	Rs. 100,000 or more		4.2%	10.4%	85.4%	
	I do not know.		0%	7.7%	92.3%	
	The pressure to perform well in summative exams can overshadow the joy of learning.					
Gender	Male		18.5%	17.9%	63.6%	0.000
	Female		6.4%	8.9%	84.7%	
Type of Institution	Private		14.5%	17.0%	68.5%	0.094
Monthly Household Income	Public		10.9%	10.3%	78.8%	0.152
	Less than 30,000 rupees		17.6%	0%	82.4%	
	Rs. 30,000 – 49,000		5.8%	7.7%	86.5%	
	Rs. 50,000 – 79,000		10.5%	10.5%	78.9%	
	Rs. 80,000 – 99,000		15.4%	17.3%	67.3%	
	Rs. 100,000 or more		14.6%	16.7%	68.8%	
	I do not know.			7.7%	92.3%	
	Sometimes, the emphasis on final grades in summative assessments hinders my learning experience.					
Gender	Male		16.2%	20.2%	63.6%	0.003
	Female		7.6%	12.1%	80.3%	
Type of Institution	Private		15.2%	17.6%	67.3%	0.163
Monthly Household Income	Public		9.1%	15.2%	75.8%	0.611
	Less than 30,000 rupees		17.6%	5.9%	76.5%	
	Rs. 30,000 – 49,000		7.7%	11.5%	80.8%	
	Rs. 50,000 – 79,000		10.5%	13.2%	76.3%	
	Rs. 80,000 – 99,000		13.6%	19.1%	67.3%	
	Rs. 100,000 or more		14.6%	18.8%	66.7%	
	I do not know.			15.4%	84.6%	
	It is frustrating when the criteria for grading summative assessments seem unclear.					
Gender	Male		7.5%	22.5%	69.9%	0.329
	Female		6.4%	16.6%	77.1%	

Type of Institution	Private	8.5%	20.6%	70.9%	0.475
	Public	5.5%	18.8%	75.8%	
Monthly Household Income	Less than 30,000	11.8%	11.8%	76.5%	0.438
	Rs. 30,000 – 49,000	3.8%	13.5%	82.7%	
	Rs. 50,000 – 79,000	10.5%	18.4%	71.1%	
	Rs. 80,000 – 99,000	8.0%	19.1%	72.8%	
	Rs. 100,000 or more	4.2%	27.1%	68.8%	
	I do not know.	0%	38.5%	61.5%	
Gender	Male	11.6%	29.5%	59.0%	0.134
	Female	6.4%	25.5%	68.2%	
Type of Institution	Private	11.5%	24.2%	64.2%	0.173
	Public	6.7%	30.9%	62.4%	
Monthly Household Income	Less than 30,000	5.9%	29.4%	64.7%	0.792
	Rs. 30,000 – 49,000	5.8%	23.1%	71.2%	
	Rs. 50,000 – 79,000	5.3%	34.2%	60.5%	
	Rs. 80,000 – 99,000	11.7%	26.5%	61.7%	
	Rs. 100,000 or more	8.3%	33.3%	58.3%	
	I do not know.	7.7%	15.4%	76.9%	

Note: The p-values in the bold font indicate significant associations at $p \leq 0.05$.

Table 4

Students' Positive perceptions of formative Assessment by Demographic Characteristics

Demographic Characteristics		strongly Disagree/Disagree	Neutral	Strongly Agree/Agree	P (Chi-square)
		I find formative assessments incredibly helpful in improving my understanding of the subject.			
Gender	Male	9.2%	20.2%	70.5%	0.566
	Female	7.6%	24.8%	67.5%	
Type of Institution	Private	9.1%	17.0%	73.9%	0.059
	Public	7.9%	27.9%	64.2%	
Monthly Household Income	Less than 30,000	5.9%	17.6%	76.5%	0.069
	Rs. 30,000 – 49,000	5.8%	11.5%	82.7%	
	Rs. 50,000 – 79,000	2.6%	36.8%	60.5%	
	Rs. 80,000 – 99,000	9.9%	20.4%	69.8%	
	Rs. 100,000 or more	14.6%	27.1%	58.3%	
	I don't know.	0%	38.5%	61.5%	

		Formative assessment activities, like quizzes and discussions, make learning engaging and interactive.			
Gender	Male	12.1%	31.2%	56.6%	0.029
	Female	7.6%	21.7%	70.7%	
Type of Institution	Private	12.1%	27.9%	60.0%	0.325
	Public	7.9%	25.5%	66.7%	
Monthly Household Income	Less than rupees 30,000	5.9%	23.5%	70.6%	0.876
	Rs. 30,000 – 49,000	13.5%	26.9%	59.6%	
	Rs. 50,000 – 79,000	5.3%	34.2%	60.5%	
	Rs. 80,000 – 99,000	10.5%	25.3%	64.2%	
	Rs. 100,000 or more	12.5%	27.1%	60.4%	
	I don't know.	0%	23.1%	76.9%	
Getting constructive feedback from my teacher helps me see where I need to focus my efforts.					
Gender	Male	16.8%	17.3%	65.9%	0.000
	Female	2.6%	17.3%	80.1%	
Type of Institution	Private	13.3%	17.0%	69.7%	0.134
	Public	6.7%	17.7%	75.6%	
Monthly Household Income	Less than rupees 30,000	11.8%	17.6%	70.6%	0.525
	Rs. 30,000 – 49,000	3.8%	15.4%	80.8%	
	Rs. 50,000 – 79,000	7.9%	26.3%	65.8%	
	Rs. 80,000 – 99,000	11.2%	16.8%	72.0%	
	Rs. 100,000 or more	16.7%	14.6%	68.8%	
	I don't know.	0%	15.4%	84.6%	
Formative assessments provide me with the opportunity to reflect on my progress and set goals for improvement.					
Gender	Male	7.5%	13.3%	79.2%	0.023
	Female	2.5%	7.6%	89.8%	
Type of Institution	Private	3.6%	9.1%	87.3%	0.280
	Public	6.7%	12.1%	81.2%	
Monthly Household Income	Less than rupees 30,000	11.8%	17.6%	70.6%	0.337
	Rs. 30,000 – 49,000	1.9%	7.7%	90.4%	
	Rs. 50,000 – 79,000	2.6%	18.4%	78.9%	
	Rs. 80,000 – 99,000	6.2%	8.0%	85.8%	
	Rs. 100,000 or more	6.3%	10.4%	83.3%	
	I don't know.	0%	23.1%	76.9%	

		I appreciate how formative assessment encourages active participation and collaboration with peers.			
Gender	Male	23.1%	22.0%	54.9%	0.019
	Female	11.5%	22.9%	65.6%	
Type of Institution	Private	13.9%	24.2%	61.8%	0.207
	Public	21.2%	20.6%	58.2%	
Monthly Household Income	Less than rupees 30,000	11.8%	17.6%	70.6%	0.111
	Rs. 30,000 – 49,000	9.6%	17.3%	73.1%	
	Rs. 50,000 – 79,000	23.7%	15.8%	60.5%	
	Rs. 80,000 – 99,000	22.8%	24.7%	52.5%	
	Rs. 100,000 or more	10.4%	27.1%	62.5%	
	I don't know.		23.1%	76.9%	

Note: The p-values in the bold font indicate significant associations at $p \leq 0.05$.

Table 5
Students' Positive Perceptions of Summative Assessment by Demographic Characteristics

Demographic Characteristics		strongly Disagree/Disagree	Neutral	Strongly Agree/Agree	P (Chi-square)
I appreciate that summative assessments clearly summarize what I've learned.					
Gender	Male	9.8%	28.3%	61.8%	0.485
	Female	10.8%	33.8%	55.4%	
Type of Institution	Private	10.9%	25.5%	63.6%	0.100
	Public	9.7%	36.4%	53.9%	
Monthly Household Income	Less than rupees 30,000	11.8%	23.5%	64.7%	0.420
	Rs. 30,000 – 49,000	3.8%	36.5%	59.6%	
	Rs. 50,000 – 79,000	2.6%	34.2%	63.2%	
	Rs. 80,000 – 99,000	13.6%	32.1%	54.3%	
	Rs. 100,000 or more	12.5%	20.8%	66.7%	
	I don't know.	7.7%	30.8%	61.5%	
Summative exams help me understand my strengths and weaknesses in the subject.					
Gender	Male	9.8%	26.0%	64.2%	0.206
	Female	7.6%	19.1%	73.2%	
Type of Institution	Private	5.5%	21.2%	73.3%	0.060
	Public	12.1%	24.2%	63.6%	
Monthly Household Income	Less than rupees 30,000	5.9%	11.8%	82.4%	0.001
	Rs. 30,000 – 49,000	9.6%	21.2%	69.2%	
	Rs. 50,000 – 79,000	7.9%	13.2%	78.9%	
	Rs. 80,000 – 99,000	11.1%	21.6%	67.3%	
	Rs. 100,000 or more	4.2%	33.3%	62.5%	
	I don't know.	0%	46.2%	53.8%	

		I feel a sense of accomplishment when I perform well in summative assessments.			
Gender	Male	6.9%	15.6%	77.5%	0.773
	Female	5.1%	15.3%	79.6%	
Type of Institution	Private	7.3%	17.0%	75.8%	0.449
	Public	4.8%	13.9%	81.2%	
Monthly Household Income	Less than rupees 30,000	5.9%	11.8%	82.4%	0.273
	Rs. 30,000 – 49,000	5.8%	5.8%	88.5%	
	Rs. 50,000 – 79,000	7.9%	23.7%	68.4%	
	Rs. 80,000 – 99,000	5.6%	17.9%	76.5%	
	Rs. 100,000 or more	8.3%	8.3%	83.3%	
	I don't know.		30.8%	69.2%	
		Summative assessments motivate me to study and take my learning seriously.			
Gender	Male	19.1%	21.4%	59.5%	0.001
	Female	8.3%	14.0%	77.7%	
Type of Institution	Private	17.6%	17.0%	65.5%	0.162
	Public	10.3%	18.8%	70.9%	
Monthly Household Income	Less than rupees 30,000	5.9%	29.4%	64.7%	0.292
	Rs. 30,000 – 49,000	7.7%	9.6%	82.7%	
	Rs. 50,000 – 79,000	18.4%	15.8%	65.8%	
	Rs. 80,000 – 99,000	16.0%	21.6%	62.3%	
	Rs. 100,000 or more	14.6%	12.5%	72.9%	
	I don't know.	7.7%	15.4%	76.9%	
		I like that summative assessments definitively measure my knowledge and skills.			
Gender	Male	20.2%	23.1%	56.6%	0.002
	Female	7.6%	20.4%	72.0%	
Type of Institution	Private	17.0%	23.6%	59.4%	0.193
	Public	11.5%	20.0%	68.5%	
Monthly Household Income	Less than rupees 30,000	23.5%	5.9%	70.6%	0.069
	Rs. 30,000 – 49,000	11.5%	17.3%	71.2%	
	Rs. 50,000 – 79,000	15.8%	21.1%	63.2%	
	Rs. 80,000 – 99,000	17.3%	24.7%	58.0%	
	Rs. 100,000 or more	4.2%	16.7%	79.2%	
	I don't know.	7.7%	46.2%	46.2%	

Note: The p-values in the bold font indicate significant associations at $p \leq 0.05$.

Results of **Poisson regression models** (Table 6) show the impact of demographic characteristics on students' negative perceptions concerning formative assessment. The findings show no significant difference

between private and public institutions. Although among students with different monthly household incomes, those with an income between Rs. 30,000 - 49,000 had the highest incidence rate of negative perceptions of formative assessment (AIRR = 0.670, 95% CI: 0.216-2.077, $p = 0.488$), while those with an income less than Rs. 30,000 had the lowest incidence rate (AIRR = 0.582, 95% CI: 0.152-2.220, $p = 0.428$). However, none of these differences were statistically significant.

Table 7 shows that male students have a significantly lower incidence rate of negative perceptions of summative assessment than female students (AIRR = 0.412, 95% CI: 0.274-0.620, $p < 0.000$). However, no significant difference was found between private and public institutions. Among students with different monthly household incomes, those with an income between Rs. 30,000 - 49,000 had the highest incidence rate of negative perceptions of summative assessment (AIRR = 0.805, 95% CI: 0.255-2.540, $p = 0.711$), while those with an income less than Rs. 30,000 had the lowest incidence rate (AIRR = 0.456, 95% CI: 0.117-1.777, $p = 0.258$).

Table 8 indicated that male students have a significantly lower incidence rate of negative perceptions of formative assessment than female students (AIRR = 0.394, 95% CI: 0.260-0.597, $p < 0.000$). However, no significant difference was found between private and public institutions. (Among students with different monthly household incomes, those with an income between Rs. 80,000 - 99,000 had the lowest incidence rate of negative perceptions of formative assessment (AIRR = 0.272, 95% CI: 0.090-0.821, $p = 0.021$), while those with an income less than Rs. 30,000 had the highest incidence rate (AIRR = 0.454, 95% CI: 0.114-1.803, $p < 0.262$).

The adjusted incident rate ratios for male students have a significantly lower incidence rate of negative perceptions of summative assessment than female students (AIRR = 0.496, 95% CI: 0.319-0.772, $p < 0.002$). However, no significant difference was found between private and public institutions (Table 9).

Table 6

Adjusted Incident Rate Ratios for Students' Negative Perceptions of Formative Assessment by Demographic Characteristics

Demographic Characteristics	AIRR	95% CI for AIRR		
		Lower Bound	Upper Bound ^p	
Gender				
Male	0.479	0.320	0.716	0.000
Female	-	-	-	-
Type of Institution				
Private	0.881	0.584	1.328	0.545
Public	-	-	-	-
Total monthly household income				
Less than rupees 30,000	0.582	0.152	2.220	0.428
Rs. 30,000 - 49,000	0.670	0.216	2.077	0.488
Rs. 50,000 - 79,000	0.377	0.116	1.229	0.106
Rs. 80,000 - 99,000	0.357	0.122	1.043	0.060
Rs. 100,000 or more	-	-	-	-

Note: Abbreviations: AIRR, Adjusted Incident Rate Ratio

Table 7

Adjusted Incident Rate Ratios for Students' Negative Perceptions of Summative Assessment by Demographic Characteristics

Demographic Characteristics	AIRR	95% CI for AIRR		<i>p</i>
		Lower Bound	Upper Bound	
Gender				
Male	0.412	0.274	0.620	0.000
Female	-	-	-	-
Type of Institution				
Private	0.796	0.525	1.206	0.281
Public	-	-	-	-
Total monthly household income				
Less than rupees 30,000	0.456	0.117	1.777	0.258
Rs. 30,000 - 49,000	0.805	0.255	2.540	0.711
Rs. 50,000 - 79,000	0.470	0.141	1.559	0.217
Rs. 80,000 - 99,000	0.351	0.118	1.043	0.060
Rs. 100,000 or more	-	-	-	-

Note: Abbreviations: AIRR, Adjusted Incident Rate Ratio

Table 8

Adjusted Incident Rate Ratios for Students' Positive Perceptions of Formative Assessment by Demographic Characteristics

Demographic Characteristics	AIRR	95% CI for AIRR		<i>p</i>
		Lower Bound	Upper Bound	
Gender				
Male	0.394	0.260	0.597	0.000
Female	-	-	-	-
Type of Institution				
Private	1.213	0.795	1.851	0.370
Public	-	-	-	-
Total monthly household income				
Less than rupees 30,000	0.454	0.114	1.803	0.262
Rs. 30,000 - 49,000	0.605	0.188	1.939	0.397
Rs. 50,000 - 79,000	0.280	0.083	0.944	0.040
Rs. 80,000 - 99,000	0.272	0.090	0.821	0.021
Rs. 100,000 or more	-	-	-	-

Note: Abbreviations: AIRR, Adjusted Incident Rate Ratio

Table 9

Adjusted Incident Rate Ratios for Students' Positive Perceptions of Summative Assessment by Demographic Characteristics

Demographic Characteristics	AIRR	95% CI for AIRR		<i>p</i>
		Lower Bound	Upper Bound	
Gender				
Male	0.496	0.319	0.772	0.002
Female	-	-	-	-
Type of Institution				
Private	0.964	0.614	1.512	0.872
Public	-	-	-	-
Total monthly household income				
Less than rupees 30,000	1.274	0.292	5.562	0.747
Rs. 30,000 - 49,000	1.434	0.413	4.980	0.571
Rs. 50,000 - 79,000	0.863	0.235	3.165	0.824
Rs. 80,000 - 99,000	0.623	0.192	2.025	0.432
Rs. 100,000 or more	-	-	-	-

Note: Abbreviations: AIRR, Adjusted Incident Rate Ratio

Discussion

This study examined the college students' perceptions of the formation and summative assessment. The findings from this study are consistent with previous research that has shown gender differences in students' perceptions of formative assessment (Buyukkarci & Sahinkarakas, 2021; Ghozali & Tyas, 2022). This study emphasized the importance of considering demographic characteristics when designing and implementing formative and summative assessments to ensure they are effective for all students regardless of their background or circumstances. The findings from this study provide valuable insights into the incidence rates of negative perceptions of formative and summative assessments among students in different demographic groups. The results suggest that gender and household income are important factors when designing and implementing formative and summative assessments to ensure their effectiveness as instructional tools. The results from this study are consistent with previous research that has shown gender differences in students' perceptions of formative and summative assessment (Suzanne & Margaret, 2021; Riese, & Stenbom, 2023).

The results also suggest that students from lower-income households may have different perceptions of formative and summative assessment than those from higher-income households, which could impact their performance on these assessments. Therefore, there is still room for improvement in student involvement in designing and implementing formative and summative assessments to train them in self-assessment skills (Wafubwa & Ochieng, 2021). This is consistent with previous research that has emphasized the importance of involving students in designing and implementing formative and summative assessments to ensure their effectiveness as instructional tools (Kumari et al., 2020; Levent & Ertok, 2020; Periasamy & Alias, 2022).

Our study showed an interesting trend in the impact of demographic characteristics on students' perceptions of formative and summative assessments. This study provides valuable insights into the incidence rates of negative perceptions of formative and summative assessment among students in different demographic groups. It highlights the need for more research on this topic. The findings suggest that gender and household income are important factors when designing and implementing formative and summative assessments to ensure their effectiveness as instructional tools.

Future Implementations:

Classroom assessment research is limited, requiring further studies across educational levels to understand students' perspectives. Instructors play a crucial role in shaping effective assessment practices, and professional development opportunities are essential for teachers to enhance their knowledge and skills. Collaboration among teachers, students, and parents is crucial for effective assessment practices. Clear policies and guidelines should be established at the school and district levels. Technology-driven assessment can enhance student engagement and motivation. Policymakers should recognize classroom assessment as a powerful tool for learning.

Limitations of the Study

The present study has several limitations that warrant consideration. Firstly, it was conducted exclusively in Lahore city, Pakistan. While this allowed for an in-depth exploration of local dynamics, it may limit the generalizability of the findings to other regions within the country. Secondly, the sample size was relatively small, which could affect the representativeness of the results. Larger and more diverse samples are generally preferred for robust conclusions. Thirdly, the study relied solely on self-reported data, introducing the possibility of social desirability bias. Participants may have provided responses they deemed socially acceptable rather than their true feelings or experiences. Lastly, the study focused exclusively on student perceptions, neglecting the viewpoints of teachers or other stakeholders involved in the assessment process. A more comprehensive approach considering multiple perspectives would enhance the study's validity and applicability.

Conclusion

In conclusion, the study provides valuable insights into the incidence rates of negative and positive perceptions of formative and summative assessment among students in different demographic groups. The findings suggest that gender and household income are important factors when designing and implementing formative and summative assessments. The

study also highlights the importance of involving students in designing and implementing assessments to ensure their effectiveness as instructional tools. The results of this study are consistent with previous research that has shown gender differences in students' perceptions of formative and summative assessment (Golzar et al., 2022). The findings also suggest that household income is essential when designing and implementing assessments. Students from lower-income households may have different perceptions of formative and summative assessment than those from higher-income households, which could impact their performance on these assessments. Therefore, it is essential to consider each student's unique needs and circumstances when designing and implementing assessments.

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