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Formative Assessment Practices and Undergraduate Students' Motivation

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Abstract: Formative assessment is widely recognized as a valuable tool in education, playing a pivotal role in shaping student learning, engagement, and motivation. Rather than merely serving as a means of grading, formative assessment involves continuous feedback, allowing students to understand their progress and areas for improvement. This study examines the impact of formative assessment practices on the motivation of undergraduate students. The study was delimited to undergraduate students of four departments of two faculties of the University of Sargodha, Main Campus, including the Faculty of Social Sciences and the Faculty of Arts and Humanities. The study was descriptive in nature. Data was collected through the Survey technique. All the undergraduate students of the University of Sargodha comprised the study population. Two hundred undergraduate students from the Faculty of Social Sciences and Arts and Humanities were randomly taken as samples for this study. The instrument was self-constructed. Results indicated that most of the students were in favour of formative assessment practices, which had a significant impact on their motivation. Significant gender-based differences were observed in several motivational constructs. It was recommended that university teachers should participate in the training programs to enhance their knowledge and skills in utilizing appropriate formative assessment procedures.

Keywords: Assessment, Formative Assessment, Students' Motivation, Undergraduate Students, Goal Orientation, Student Interest, Self-esteem, Students' Satisfaction, Learning Outcomes

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Introduction

Assessment is a crucial element of education that helps improve teaching and learning by allowing teachers to measure the strengths and weaknesses of their students (Baniabdelrahman, 2010). The process involves the identification and gathering of information, the receiving of feedback, and the analysis and modification of learning strategies to overcome learning barriers. Assessment refers to the systematic examination of student performance, with the aim of improving learning outcomes and making necessary adjustments to instructional approaches (Brown, 2022). The summative assessments in education have a limited ability to enhance learning during teaching. Although there are many assessments used in the teaching process, good instructors should employ formative assessment in the classroom to find out what the students don't grasp, offer clarification, and then adjust their methods as needed (Cauley & McMillan, 2010).

Summative assessments are used to assess the information along with abilities that students have learned by reaching the end of the course. Nevertheless, it is essential to recognize that these examinations have minimal influence on improving education along the learning journey. Among the several assessments utilized in teaching, it's

crucial for talented teachers to utilize formative assessment. These assessments serve the purpose of identifying student misunderstandings, providing feedback, and enabling teachers to make necessary adjustments to their instruction (Cauley & McMillan, 2010). Formative assessments play an essential role in educational success as they focus on enhancing learning rather than only assessing it (Box, 2019).

Formative assessment, a vital tool for educational performance, focuses on enhancing learning rather than just assessing what has been taught (Box, 2019). Formative assessment is a crucial phase of education and is widely recognized as a valuable tool for teachers in the classroom and for educational authorities in making decisions (Torrance, 2012).

Formative assessment has a remarkable influence on student motivation, as emphasized by several experts. Students are the primary consumers of learning information in formative assessment, according to Brookhart (2013). This links the process of evaluating progress with the phases of self-directed learning. Shepard et al. (2018) noticed that implementing formative assessment processes that offer feedback on students' learning progress might encourage an improvement in mental state, causing students to value their participation in learning activities.

Formative assessment is an important instrument in education that enhances learning, motivation, and student engagement. The framework enables continuous feedback and adjustment in instruction, ensuring that students achieve their educational goals. Formative assessment improves students' academic advancement and cultivates a more profound comprehension of their subject matter by employing interactive, learning-centered, and introspective approaches. Implementing formative assessment methodologies in educational settings has the capacity to greatly enhance teaching and learning outcomes.

Literature Review

Motivation comes from the Latin word "Movere," which means "to move" since motivation provides individuals with the ambition to act (Eccles et al., 1998). Motivation is typically characterized as "a process in which goal-directed activity is instigated and sustained" in the scientific literature (Schunk et al., 2014, p. 5). According to Gardner (2020), motivation is recognized as a primary determinant that might impact learning. Learning enables students to acquire new knowledge and skills, while motivation drives students to accomplish their goals during the learning process.

The concept of motivation is generally acknowledged as a significant factor influencing human activities and achievement. Educators and professionals stress the consequence of motivation in student accomplishment and the sustained advancement of learning (Alkış, 2015; Aluçdibi & Ekici, 2012).

In education, motivation performs an essential role in guiding the consideration of children and young entities concerning a specific objective and the desired outcome. By exploiting this, they endure undeterred by potential interruptions, enabling them to withstand their focus for prolonged periods. Students who are driven show performances that are focused on achieving specific goals. They show proactivity, demonstrate persistence, utilize their curiosity, and reveal a sense of accountability and respect for their responsibilities. They have the essential expertise and possessions to design and accomplish their own learning process (Aslam, 2021).

Formative assessment is a technique used in classrooms to identify the specific learning requirements of students and adjust teaching and learning strategies accordingly. The approach might be either teacher-centered, student-centered, or a blend of both. Teacher-centered approaches prioritize the efforts of teachers, whereas student-centered approaches involve students in the process of peer assessment and self-assessment.

Diverse experts present varying viewpoints on the effect of formative assessment practices on undergraduate student motivation. According to Brookhart (2013), students are the main recipients of learning information in formative assessment. He also establishes an association between the formative assessment cycle and the several stages of self-regulated learning. According to Shepard et al. (2018), using formative assessment procedures that offer feedback on learning progress and growth might promote a learning orientation among students, leading them to personally appreciate their involvement in learning activities.

Researchers utilize several incentive theories, such as learning orientation theory and self-determination theory, to investigate these mechanisms. Some prioritize students as proactive agents, while others emphasize the significance of professors. Nevertheless, there is a scarcity of research regarding the impacts and fundamental mechanisms of formative evaluation on motivation in typical classroom environments. Dweck (2017) argues that students' goal orientation is malleable and can be shaped by feedback.

Types of Motivation

Deci and Ryan (2002) explored three types of achievement-affecting motivations:

Intrinsic Motivation

An intrinsically motivated person engages in a behavior because it is fascinating, entertaining, or rewarding. Intrinsic motivation comes from personal interest, curiosity, and desires, which lead to rewarding activities. These actions do not need additional incentives or punishments (Şen, 2006). Volunteerism, willingness, and autonomy are common in intrinsically motivated people (Deci & Ryan, 2000). Vibulphol (2016) argues that intrinsic motivation leads to meaningful human experiences. Çelen (2010) highlights the significance of intrinsic motivation in education, claiming that students learn better when they are genuinely interested in the subject. Ciccarelli and White (2012) add that intrinsic motivation entails doing things that are fun, gratifying, difficult, or satisfying. Students learn because they want to, not because they have to. According to Lightbown and Spada (2013), teachers can develop intrinsic motivation by creating a supportive classroom atmosphere.

Extrinsic Motivation

Rewards, penalties, and social praise drive extrinsic motivation. Extrinsic motivation is defined as activities intended for external rewards. Deci and Ryan (2016) claim that extrinsic motivation drives students to behave in ways teachers and parents prefer. According to Vibulphol (2016), behaviours driven by external sources prioritise the results rather than the activities themselves. According to Deci and Ryan (2016), students frequently exhibit behaviours that are considered essential by instructors and parents because of external motivation rather than genuine personal interest.

Need of Motivation (A Motivation)

According to Ozan & Kincal (2018), people become demotivated when they are unable to make a connection between their activities and the outcomes of those efforts. In this scenario, individuals lack the ability to connect their actions or their environment with their consequences, resulting in a lack of motivation, whether it be intrinsic or extrinsic. Hence, an individual who holds the belief that their actions will not yield any personal advantage refrains from taking any action and consequently experiences a state of motivation.

Gaining a comprehensive understanding of the various forms of motivation and their effects on student learning is essential for improving educational results. Intrinsic motivation cultivates profound involvement and enduring enthusiasm for learning, whereas extrinsic motivation can stimulate performance by means of external rewards. Teachers can develop more efficient and motivated learning environments by eliminating a motivation and utilizing different motivational principles.

Relationship between Formative Assessment and Students' Motivation

Cauley and McMillan (2010) validate the existence of a positive correlation between formative assessment and motivation. They also provide several approaches regarding formative assessment that might augment students' motivation. It has also been discovered that a correlation exists between motivation and feedback. They emphasize the significance of students' motivation, which encompasses their actions, goal orientation, and self-efficacy.

According to Khursheed et al. (2016), formative assessment enhances students' motivation and perseverance by demonstrating that their abilities may be enhanced and that reaching objectives is within their grasp. It indicates that

using formative evaluation in the classroom leads to increased student motivation to learn. Moss and Brookhart ([2019](#)) assert that formative evaluation may serve as a potent tool for enhancing students' intrinsic motivation.

According to Ozan and Kincal ([2018](#)), the way formative assessment is employed affects the learning that takes place for the learner. Offering useful feedback that aligns with subject requirements has the potential to enhance students' desire to study. Formative assessment procedures, such as feedback, are used to enhance student motivation in the standards-based rating. Instructors use these tactics, they see a rise in learner engagement and inspiration. Developing motivation for learning may enhance comprehension of material and result in higher success in a component that covers a knowledge criterion (Bray & McClaskey, [2015](#)).

Statement of Problem

In higher education, formative assessment becomes popular as a means of improving student learning and student motivation. How, however, do undergraduate students understand and perceive the link between these assessments and motivation? Positive perception might make them more efficient while negative perception might reduce their usefulness. Despite the potential impact, limited research exists on this topic, creating challenges for educators in designing effective assessment strategies. This study aims to explore perceptions of undergraduate students regarding the effect of formative assessment on their motivation.

Research Objectives

The study aimed to investigate the perceptions of undergraduate students regarding the effect of formative assessment on motivation.

The objective of the research was to investigate the effect of formative assessment practices on undergraduate students' motivation.

Research Question

1. What impact does formative assessment have on the motivation of the students at the undergraduate level?

Research Hypothesis

Hypotheses of the study were;
- **Ho1:** There is no significant mean difference between male and female student's perceptions about the impact of formative assessment practices on motivation.
- **Ho2:** There is no significant mean difference between the students belonging to Urban and Rural areas regarding their perceptions of the effect of formative assessment practices on motivation.
- **Ho3:** There is no significant mean difference amongst the students of different teaching departments in their perceptions of the effect of formative assessment on motivation.
- **Ho4:** There is no significant mean difference amongst the students of different semesters in their perceptions of the effect of formative assessment on motivation.

Research Methodology

The research was descriptive in nature, and the data was collected through the survey technique.

Population

All the undergraduate students of the University of Sargodha comprised the study population.

Sample

Two hundred undergraduate students from the Faculty of Social Sciences were taken as samples for this study. The sample was derived through a proportionate stratified sampling technique.

Research Instrument

After a review of the literature, the instrument was self-constructed. The attitude scale was developed in the form of a five-point Likert Scale for formative assessment's impact on motivation. The questionnaire for the impact of formative assessment on the five-point rating scale i.e. Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree had 30 items under five indicators i.e. Goal Orientation with 6 items, Students Interest with 6 items, Students' Self-Esteem with six items, Students Satisfaction with six items, Learning Outcome with six items. First of all, peer consultation was sought, and different changes were made to improve the instruments. Face and content validity was checked, and the opinion of five experts was sought for validation. These experts were the faculty members of the Institute of Education. All the experts were requested to analyze the tool to check for face and content validity. They also review the indicators and suitability of the items. The scale was pilot-tested after the experts' suggestions. Pilot testing was conducted through a questionnaire of 50 undergraduate students from the Faculty of Sciences, University of Sargodha. To find out the content validity of items, Reliability (Cronbach Alpha) was used to find out the CVR value of items. The Cronbach Alpha value of 30 items was .851, which falls within the acceptable limits.

Data Collection

Data collection is essential but difficult phase of the research study. A survey technique was used for the collection of data .The Data was collected by self-approach from students of University of Sargodha. Data were collected from undergraduate students from faculty of Social Sciences of University of Sargodha.

During data collection, the respondents were ensured the confidentiality of their information. To minimize the missing data, it was ensured that students had provided all the required information.

Data Analysis

Table 1

Demographic information of university students

Variable	Categories	Frequency	Percentage in Sample
Gender	Male	67	33.50
	Female	133	66.50
Residence	Urban	149	74.50
	Rural	51	25.50
Faculty	Social Sciences	100	50.00
	Arts & Humanity	100	50.00
Departments of the Faculty of Social Sciences	Education	50	50.00
	Psychology	50	50.00
Departments of Faculty of Arts & Humanities	Information Management	50	50.00
	Media & Communication	50	50.00
Semester of Study	4th	64	32.00
	6th	60	30.00
	8th	76	38.00

Table 1 presents the demographic breakdown of a sample of 200 university students, showing a higher proportion of female students (66.5%) compared to male students (33.5%). The students predominantly reside in urban areas, with 74.5% from urban settings and 25.5% from rural settings. Students are evenly represented between the two main faculties, Social Sciences and Arts & Humanities, each accounting for 50% of the sample. Within the Faculty of Social

Sciences, the departments of Education and Psychology each comprise 50% of the faculty's representation, indicating an equal distribution across these two departments. Similarly, in the Faculty of Arts & Humanities, both the Information Management and Media & Communication departments are equally represented, with each department accounting for 50% of the students within this faculty. Finally, students are distributed across three semesters, with 32% in the 4th semester, 30% in the 6th semester, and 38% in the 8th semester.

Table 2

Mean difference of perceptions of undergraduate students regarding the influence of formative assessment practices on their motivation with respect to their gender

Variables	Gender	N	Mean	Std. Deviation	t	p
Goal Orientation	Male	67	22.39	4.66	-1.414	0.159
	Female	133	23.31	4.18		
Students Interest	Male	67	22.18	4.49	-2.659	0.008
	Female	133	23.73	3.56		
Students' Self-esteem	Male	67	23.18	4.35	-1.713	0.088
	Female	133	24.23	3.98		
Student Satisfaction	Male	67	22.81	4.41	-2.605	0.010
	Female	133	24.29	3.47		
Learning Outcomes	Male	67	22.60	4.19	-2.680	0.008
	Female	133	24.16	3.73		
Effect of Formative Assessment on Motivation	Male	67	113.15	19.57	-2.561	0.015
	Female	133	119.72	15.77		

Table 2 shows the mean differences in perceptions of male and female undergraduate students regarding the influence of formative assessment practices on their motivation. There are significant differences in several variables. Specifically, for students' interest (t = -2.659, p = 0.008 < 0.05), student satisfaction (t = -2.605, p = 0.010 < 0.05), and learning outcomes (t = -2.680, p = 0.008 < 0.05), female students show significantly higher mean scores than male students, indicating that formative assessment practices may have a greater positive influence on these aspects of motivation among female students.

The overall effect of formative assessment on motivation also shows a significant difference, with t = -2.561, df = 198, and p = 0.015 < 0.05. The higher mean score for female students (119.72) compared to male students (113.15) suggests that female students experience a greater positive impact on motivation from formative assessment practices.

Table 3

Mean difference of perceptions of undergraduate students regarding the influence of formative assessment practices on their motivation with respect to their residence

Variables	Gender	N	Mean	Std. Deviation	T	p
Goal Orientation	Urban	149	23.16	4.27	0.893	0.373
	Rural	51	22.53	4.62		
Students Interest	Urban	149	23.40	3.71	1.139	0.256
	Rural	51	22.67	4.59		
Students' Self-esteem	Urban	149	23.99	4.23	0.623	0.534
	Rural	51	23.57	3.84		
Student Satisfaction	Urban	149	24.04	3.85	1.539	0.125
	Rural	51	23.08	3.87		

Variables	Gender	N	Mean	Std. Deviation	T	p
Learning Outcomes	Urban	149	23.91	3.72	1.709	0.089
	Rural	51	22.82	4.48		
Effect of Formative Assessment on Motivation	Urban	149	118.50	17.01	1.362	0.474
	Rural	51	114.67	18.26		

Table 3 presents the mean differences in perceptions of undergraduate students regarding the influence of formative assessment practices on their motivation based on students' residence. In this analysis, none of the variables show statistically significant differences, as all p-values are above 0.05. For instance, goal orientation (t = 0.893, p = 0.373) and students' interest (t = 1.139, p = 0.256) show no significant difference between urban and rural students. The greater mean (118.50) shows that the urban students have slightly better influence of formative assessment on motivation than rural students mean (114.67); however, this difference is not statistically significant (t = 1.362, p = 0.474 > 0.05), indicating that formative assessment practices affect motivation similarly across students from both urban and rural backgrounds.

Table 4

The mean difference of perceptions of undergraduate students regarding the influence of formative assessment practices on their motivation with respect to their department of study

Variables	Education (N=50)		Psychology N=50)		Information Management (N=50)		Media & Communication (N=50)					
	M	SD	M	SD	M	SD	M	SD	Df	Mean Square	F	Sig.
Goal Orientation	4.16	0.58	3.82	0.75	3.60	0.79	3.68	0.79	2	3.06	5.79	0.001
									197	0.53		
Students Interest	4.00	0.64	3.78	0.62	3.78	0.85	3.67	0.85	2	0.97	2.10	0.102
									197	0.46		
Students' Self-esteem	4.18	0.56	3.86	0.83	3.80	0.73	3.86	0.73	2	1.49	2.66	0.049
									197	0.56		
Student Satisfaction	4.14	0.50	3.88	0.69	3.80	0.81	3.80	0.81	2	1.37	2.87	0.038
									197	0.48		
Learning Outcomes	4.12	0.48	4.12	0.70	3.76	0.62	3.76	0.80	2	1.22	2.80	0.041
									197	0.43		
Impact of Formative Assessment on Motivation	124.8	11.9	116.6	17.6	114.5	16.3	115	20.86	2	1530.35	6.47	0.000
									197	236.64		

Table 4 presents the results of an analysis of variance (ANOVA) to determine whether significant differences exist in the perceptions of undergraduate students regarding the influence of formative assessment practices on their motivation based on their department of study. The study examines various motivational factors, including Goal Orientation, Students' Interest, Students' Self-Esteem, Student Satisfaction, Learning Outcomes, and the overall Impact of Formative Assessment on Motivation, across four departments: Education, Psychology, Information Management, and Media and communication. The ANOVA results indicate that statistically significant differences exist between departments for certain constructs, as evidenced by p-values less than 0.05.

Table 4 shows a significant difference among departments (p = 0.001), indicating that perceptions of goal orientation vary significantly by department. Mean values suggest that students in the Department of Psychology demonstrate higher goal orientation (M = 3.82) compared to students in other departments. Similarly, it indicates significant differences among departments (p = 0.049), suggesting that formative assessment impacts self-esteem differently depending on the department, with Education students reporting the highest self-esteem (M = 4.18). Meanwhile, student satisfaction and learning outcomes exhibit significant departmental differences (p = 0.038 and p = 0.041, respectively), suggesting that students' satisfaction with formative assessments and perceived learning outcomes vary by department. Education students report higher satisfaction (M = 4.14) and learning outcomes (M = 4.12) than their counterparts.

The overall Impact of Formative Assessment on Motivation shows a highly significant difference between departments (p = 0.000), with students in Education reporting the greatest perceived impact (M = 124.8). So, the null hypothesis that "There is no significant mean difference among students from different teaching departments in their perceptions of the effect of formative assessment on motivation" is rejected.

Table 5

Mean difference of perceptions of undergraduate students regarding the influence of formative assessment practices on their motivation with respect to their semesters of study

Variables	4th Semester (N=64)		6th Semester (N=60)		8th Semester (N=76)		Df	Mean Square	F	Sig.
	M	SD	M	SD	M	SD				
Goal Orientation	22.38	3.88	23.68	4.28	22.99	4.36	2	0.48	0.85	0.514
							197	0.57		
Students Interest	22.36	3.69	23.82	4.01	23.45	3.95	2	0.83	1.8	0.115
							197	0.46		
Students' Self-esteem	23.39	3.78	23.88	60.00	24.29	4.13	2	1.26	2.28	0.048
							197	0.55		
Student Satisfaction	23.27	3.88	24.32	3.92	23.80	3.87	2	1.60	3.44	0.005
							197	0.46		
Learning Outcomes	23.41	3.89	23.41	4.24	23.64	3.79	2	1.46	3.47	0.005
							197	0.42		
Impact of Formative Assessment on Motivation	114.8	15.5	119.3	18.7	117.5	17.7	2	623.02	2.12	0.064
							197	293.37		

Table 5 shows the results of an ANOVA to examine differences in undergraduate students' perceptions of formative assessment's influence on their motivation across different semesters: 4th, 6th, and eighth semesters. Findings reveal statistically significant semester-based differences for certain constructs including Students' Self-Esteem (p = 0.048), Student Satisfaction (p = 0.005), and Learning Outcomes (p = 0.005) show significant differences, suggesting varying impacts of formative assessment across semesters. Notably, 8th-semester students report higher self-esteem (M = 24.29) than those in earlier semesters, while 6th-semester students report the highest satisfaction (M = 24.32) and similar learning outcomes to other semesters.

Goal Orientation (p = 0.514), Students' Interest (p = 0.115), and the overall Impact of Formative Assessment on Motivation (p = 0.064) do not demonstrate significant differences across semesters.

Therefore, the null hypothesis Ho4: There is no significant mean difference among students from different semesters in their perceptions of the effect of formative assessment on motivation, which has failed to be rejected.

Findings

1. T-test shows mean differences in perceptions of male and female undergraduate students regarding the influence of formative assessment practices on their motivation across several motivational constructs, including Goal Orientation, Students' Interest, Students' Self-Esteem, Student Satisfaction, Learning Outcomes, and overall Effect of Formative Assessment on Motivation. (Table 2)

2. The t-test results reveal no statistically significant differences between urban and rural students for any of the constructs, as all p-values exceed the 0.05 threshold. So, there was no significant mean difference among students from urban and rural areas in their perceptions of the effect of formative assessment on motivation. (Table 3)

3. Results of an ANOVA indicate a significant difference among departments (p = 0.001), indicating that perceptions of goal orientation vary significantly by department. Mean values suggest that students in the Department of Psychology demonstrate higher goal orientation (M = 3.82) compared to students in other departments. Similarly, it indicates significant differences among departments (p = 0.049), suggesting that formative assessment impacts self-esteem differently depending on the department, with Education students reporting the highest self-esteem (M = 4.18). The overall Impact of Formative Assessment on Motivation shows a highly significant difference between departments (p = 0.000), with students in Education reporting the greatest perceived impact (M = 124.8). (Table 4)

4. Results of an ANOVA reveal statistically significant semester-based differences for certain constructs, including Students' Self-Esteem (p = 0.048), Student Satisfaction (p = 0.005), and Learning Outcomes (p = 0.005) show significant differences, suggesting varying impacts of formative assessment across semesters. Notably, 8th-semester students report higher self-esteem (M = 24.29) than those in earlier semesters, while 6th-semester students report the highest satisfaction (M = 24.32) and similar learning outcomes to other semesters. Goal Orientation (p = 0.514), Students' Interest (p = 0.115), and the overall Impact of Formative Assessment on Motivation (p = 0.064) do not demonstrate significant differences across semesters. (Table 5)

Conclusions and Discussion

These findings suggest that formative assessment practices impact student motivation in multifaceted ways, with notable variations across gender, department, and semester. Significant gender-based differences were observed in several motivational constructs. Therefore, it was concluded that female students reported higher levels of student interest, student satisfaction, learning outcomes, and the overall impact of formative assessment on motivation compared to male students. Gender-based differences in motivation, such as higher levels of interest, satisfaction, and learning outcomes reported by female students, corroborate findings in educational psychology. Alotaibi et al. (2024) reveal that female students often experience greater academic satisfaction and a stronger drive for self-improvement, which may explain their positive response to formative assessment. These motivational factors could be attributed to the generally higher self-regulation skills observed in female students, who tend to engage more proactively with feedback.

It was also concluded on the basis of the findings of the study that no significant differences were found in perceptions of formative assessment's impact on motivation between urban and rural students, indicating similar experiences regardless of residential background. This suggests that the benefits of formative assessment practices may transcend geographical divides, potentially providing equitable academic support across diverse environments.

Differences based on students' departments of study were also noted, with psychology students showing higher goal orientation than other departments. Similarly, Education students demonstrated the highest levels of self-esteem and reported the greatest overall impact of formative assessment on their motivation. These differences may be attributed to discipline-specific teaching methods and learning expectations, as Psychology and Education often emphasize student-centred learning and self-directed study (Iglesias et al., 2020). Formative assessment, which encourages goal-setting and reflection, may thus resonate more with students in these fields, reinforcing their academic objectives and sense of purpose (Rust, 2007).

Further, the results show semester-based differences in students' perceptions, particularly in self-esteem, student satisfaction, and learning outcomes. Notably, 8th-semester students reported higher self-esteem, while 6th-semester students had the highest satisfaction levels, pointing to an increased perceived impact of formative assessments on motivation in later semesters. As students become more experienced in their academic fields, they may better understand and apply formative feedback, enhancing their self-confidence and satisfaction with learning outcomes (Carless, 2019; Nicol & Macfarlane-Dick, 2021). However, constructs such as goal orientation, students' interest, and the overall impact of formative assessment on motivation showed no significant differences across semesters, suggesting these aspects remain relatively stable throughout academic progression. However, the stability in constructs like goal orientation across semesters aligns with the notion that foundational motivational traits tend to be more stable and less influenced by formative assessments (Dinsmore & Alexander, 2016).

Recommendations

The following suggestions have been made after the research consequences:

1. It is recommended that curriculum developers at universities should include peer evaluations, frequent quizzes, and reflective activities with prompt feedback in the formative assessment procedures as a regular part of teaching method.

2. Differences in motivational outcomes across academic departments highlight the need for consistent formative assessment practices that maintain the distinct learning goals of each field while supporting shared goals like self-efficacy and academic engagement.

3. Teachers ought to participate in the training programs to enhance their knowledge and skills in utilizing appropriate formative assessment procedures. Training programs should prioritize the development of skills in designing and implementing assessments that optimize student involvement and deliver valuable feedback.

4. Encouraging students to set personal goals and track progress within their assessments can reinforce goal orientation over the academic journey, fostering a growth-oriented learning mindset.

5. Educational institutions should consider conducting periodic feedback sessions with students and faculty to assess the effectiveness of formative assessments across departments and academic stages.

6. Educators should establish an encouraging educational setting that motivates students to engage actively in formative evaluations. Student motivation may be sustained at high levels with the use of practices like formative feedback sessions and collaborative tasks.

7. The Higher Education Commission (HEC), Pakistan could initiate professional development programs that train educators in effective formative assessment practices tailored to gender, department, and semester-specific needs. These programs could cover strategies to provide constructive feedback and use assessments to foster student engagement and motivation throughout their academic journey.

8. HEC could develop benchmarking tools to help institutions evaluate the effectiveness of their assessment practices. Institutions could use these tools to identify areas where students are motivated and areas that need improvement, ensuring assessments are continually refined to support optimal learning outcomes.

9. Students should actively participate in formative assessments, using them as opportunities for self-reflection and growth. By setting personal learning goals and tracking their progress, students can enhance their goal orientation and stay motivated throughout their academic journey. Moreover, students can benefit from constructively using formative assessment feedback to boost their self-esteem and satisfaction. Instead of focusing solely on grades, students should view assessments as a means of identifying strengths and areas for improvement, which can reinforce confidence and motivation over time.

10. Future researchers could conduct longitudinal studies to examine how formative assessments influence motivation over the course of an entire academic program.

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