Personalized Learning and Academic Achievements: A Study of Secondary Level Students

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Abstract: This study was conducted to find out the role of personalized learning in students' academic success at secondary level. The objectives of study were to identify the various practices of personalized learning provided by teacher to their students, to find out the academic achievement of students and to examine the role of personalized learning in academic achievement of students. This study was descriptive in nature and survey method was used. The population of the study consisted of five hundred fifty-six (556) female students from government secondary schools of city Kotli Azad Jammu and Kashmir. The researchers selected simple random sampling technique for the selection of two hundred thirty (230) female students as a sample of the study. The researchers constructed a five-point Likert-scale questionnaire for the collection of data. Data were collected by personal visits. The collected data were analyzed through SPSS by using mean score, percentage, frequency, standard deviation. It was found that the teachers knew how their students learn best, and they supported them if they needed more time to understand the concepts. Group work and feedback from teachers helped them improve their work and adaptive software offered personalized learning paths to students. It was also found that regular assessments kept students engaged in their learning process and collaborative planning between teachers also helped them understand lessons. It is recommended that the teachers may receive training on personalized learning strategies and technology integration, and schools may invest in adaptive software and LMS to cater to the needs of students. Students may be given more autonomy and choices in their learning process and regular assessments, and feedback may be used to improve student learning outcomes.

Key Words: Personalized Learning, Academic Achievement, Secondary School Students

Introduction

Personalized learning is really gaining traction these days as a solid way to boost student success. It is all about customizing instruction to fit the unique needs and abilities of each student (Pane et al., 2015). With classrooms becoming more diverse and the realization that the old "one-size-fits-all" approach just does not cut it anymore, personalized learning strategies are getting a lot of attention in both research and in schools (Bray & McClaskey, 2014). Studies have shown that when learning is personalized, students tend to be more engaged, motivated, and even perform better academically (Walkington, 2013).

Personalized learning is an idea that every student learns differently and at their own pace (Gardner, 2011). Unfortunately, traditional teaching methods often overlook these differences. This can leave some students struggling to keep up while others might not feel challenged at all (Tomlinson, 2001). But personalized learning flips that script. It emphasizes the importance of adjusting teaching to fit each student's needs, which can lead to more effective learning and better academic results (Arnold, & Hattie, 2011).

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Let us not forget about teachers. They are absolutely key in making personalized learning work. Good teachers use a variety of strategies to meet different learning styles, speeds, and interests (Arnold, & Hattie, 2011). This might look like learning menus, tiered assignments, or even integrating technology into lessons (Tomlinson, 2001). Still, there's a lot we don't know yet about the best specific strategies teachers can use to tailor their instruction for success.

And here is another thing to consider — the world is changing fast. As automation and artificial intelligence (AI) shake up the job market, it is becoming increasingly important for students to build skills like critical thinking, creativity, and problem-solving (Battelle for Kids, 2015). Personalized learning can really help with this. It gives students more control over their own learning journey, which can help them develop these essential skills (Bray & McClaskey, 2014). So, the focus of this study is to dive into how personalized learning plays its role in academic achievement of secondary school students. By looking closely at this relationship, the researchers hope to add to the growing research on personalized learning and its potential to enhance educational outcomes.

Objectives of the study
The objectives of study are as follows:
1. To measure the academic achievements of students at secondary level.
2. To examine the role of personalized learning in enhancing academic achievements of students at secondary level.

Research Questions of the Study
The research questions are as follows:
1. What are the academic achievements of students at secondary level?
2. To what extent there is a role of personalized learning in enhancing academic achievements of students at secondary level?

Review of the Related Literature
Personalized Learning in Educational Institutions
Bray and McClaskey (2014) provide a related definition of personalized learning that has had a significant impact on educational institutions: "In a personalized learning environment, students actively participate in their education." Depending on how individuals learn best, they have a say in what they learn. Students are free to choose how they present their knowledge and evidence of learning. Learners' co-design and own their education in a learner centered setting. The instructor serves as their personal mentor.

Practices of Personalized Learning
Personalized learning refers to an educational practice where instruction is tailored to each individual student's needs, pace, and learning style, allowing them to progress through material at their own rate and using methods that best suit their learning preferences, often utilizing technology to adapt content and provide targeted feedback (Pane, et al., 2015). Here are some key practices of personalized learning.

Instructional Practices
Personalized education Adapting educational experiences to each student's unique needs, interests, and strengths is the main goal of instructional techniques. To enable more meaningful and successful engagement, this method frequently uses data-driven techniques to modify the pace, content, and learning methodologies for every student. Because it fits with their learning preferences and fosters a sense of autonomy in the learning process, research indicates that personalized learning can improve student outcomes (Pane et al., 2015).

Technology Enhances Practices
Technology improves teaching methods by offering flexible learning resources that meet the needs of each individual student. By using data to modify the pace, content, and degree of difficulty, these technologies support personalized learning. According to studies, by providing individualized education, this kind of technology can raise student motivation,

engagement, and achievement (Anderson, 2017). This method gives students the assistance they require to succeed at their own pace while enabling a more effective use of class time.

Student Centered Practices

Students' unique needs, interests, and learning preferences are given top priority in student-centered, personalized learning strategies. By enabling students to actively participate in their education, these techniques create a learning environment that increases motivation, independence, and engagement. Because students are more engaged in their education when they have options and control over their educational experiences, research has demonstrated that student-centered individualized learning can result in better academic achievements (Wang, 2023).

Teacher Facilitated Practices

In teacher-facilitated personalized learning methods, teachers assist and steer each student's unique learning path by utilizing data and assessment tools. Teachers operate as facilitators, delivering individualized teaching, feedback, and assistance while supporting self-directed learning. According to research, by meeting students where they are and allowing them to go at their own pace, teachers who customize teaching in this way can enhance student outcomes (Basham et al., 2015).

Goal Setting and Self-Reflection

Personal learning objectives and progress reflection are encouraged for students. In their learning process, this encourages self-control, critical thinking, and accountability (Schunk et al., 2008).

Reasearch Methodology

In this study quantitative research approach was used to plan the overall study. In quantitative approach descriptive method was used to conduct the research. In descriptive method cross sectional survey technique was used to collect the data from the respondents. All the students of Secondary level in City Kotli AJ&K (556) were the population of the study. Simple random sampling technique was used for selection of sample (230). A self-developed questionnaire used as a research tool for this study. The questionnaire was validated by two experts. For the purpose of pilot testing the questionnaires were distributed among 30 secondary school students who were not the part of the final survey. The purpose of pilot testing was to check the readability and reliability of the instrument. The instrument's reliability was checked using the Cronbach's Alpha statistical technique, which was conducted with the assistance of SPSS (version 22). Reliability co-efficient of Cronbach's Alpha was. 0.702 the value was deemed acceptable. The researcher personally visited all the Secondary schools of city Kotli AJ&K and collected the data. Statistical Package for Social Sciences (SPSS) used for the analysis of data. The researchers applied mean score, percentage, frequency and standard deviation for the analysis of data.

Results
Objective 1: Academic Achievements
Table 1

Academic Achievement

Year	Percentage	SD
2023	75.3	2.254
2024	87.5	1.235
Overall	81.4	1.763

Descriptive statistics was used to calculate the achievements of the students. Table 1 indicates that, the academic achievements of year 2023 were 75.3% with SD = 2.254 and for the year 2024 the academic achievements of students were 87.5% with SD = 1.235. The overall academic achievements of the students were 81.4% with SD = 1.763.

Objective 2: Role of Personalized Learning in Enhancing Academic Achievements
Personalized Learning (Instructional Practices): Academic Achievements
Table 2
My Teacher Knows How I Learn Best

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	90	122	10	5	3	4.27	.456
Percentage		39.1	53.0	4.3	2.2	1.3		

Table 2 indicates that 92.1% (39.1%SA +53.0%A) of respondent agreed with the statement that their teachers knew how they learnt best. Furthermore, mean score (4.27) and SD (.456) of respondents also reflect the opinion in favour of the statement.

Table 3
My Teacher Supports Me if I Need More Time to Understand

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	66	124	24	11	5	4.02	.884
Percentage		28.7	53.9	10.4	4.8	2.2		

Table 3 indicates that 82.6% (28.7%SA +53.9%A) of respondent agreed with the statement that their teachers supported them if they needed more time to understand. Furthermore, mean score (4.02) and SD (.884) of respondents also reflect the opinion in favor of the statement.

Table 4
Groups Help Me to Learn Best

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	67	110	26	21	6	3.92	1.001
Percentage		29.1	47.8	11.3	9.1	2.6		

Table 4 indicates that 76.9% (29.1%SA +47.8%A) of respondent agreed with the statement that Groups help me to learn best. Furthermore, mean score (3.92) and SD (1.001) of respondents also reflect the opinion in favor of the statement.

Table 5
I Get Feedback that Helps Me in Improvement

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	65	128	21	10	6	4.03	.886
Percentage		28.3	55.7	9.1	4.3	2.6		

Table 5 indicates that 84% (28.3%SA +55.7%A) of respondent agreed with the statement that they got feedback that helped them in improvement. Furthermore, mean score (4.03) and SD (.886) of respondents also reflect the opinion in favor of the statement.

Table 6
My Teacher Uses Tests to Plan Lessons for Me

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	8	5	2	110	105	1.70	.882
Percentage		3.5	2.2	.9	47.8	45.7		

Table 6 indicates that 93.5% (47.8%DA +45.7%SDA) of respondent disagreed with the statement that their teachers used tests to plan lessons for them. Furthermore, mean score (1.70) and SD (.882) of respondents also reflect the opinion against the statement.

Table 7
I Can Choose Activities of My Interest

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	2	1	3	120	104	1.60	.632
Percentage		.9	.4	1.3	52.2	45.2		

Table 7 indicates that 97.4% (52.2%DA +45.2%SDA) of respondent disagreed with the statement that they could choose activities of their interest. Furthermore, mean score (1.60) and SD (.632) of respondents also reflect the opinion against the statement.

Table 8
I Have a Plan for Achieving My Learning Goals

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	33	115	49	26	7	3.61	.968
Percentage		14.3	50.0	21.3	11.3	3.0		

Table 8 indicates that 64.3% (14.3%SA +50.0%A) of respondent agreed with the statement that they had a plan for achieving their learning goals. Furthermore, mean score (3.61) and SD (.968) of respondents also reflect the opinion in favor of the statement.

Personalized Learning (Technology Enhances Practices): Academic Achievements
Table 9
The LMS Helps me Track my Assignments and Grades

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	3	2	2	137	86	1.69	.664
Percentage		1.3	.9	.9	59.6	37.4		

Table 9 indicates that 97% (59.6%DA +37.4%SDA) of respondent disagreed with the statement that the LMS helped them track their assignments and grades. Furthermore, mean score (1.69) and SD (.664) of respondents also reflect the opinion against the statement.

Table 10
Adaptive Software Offers Personalized Learning Paths that Suit My Needs

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	77	58	52	55	23	3.18	1.264
Percentage		18.3	25.6	22.6	23.9	10.0		

Table 10 indicates that 82.6% (18.3%SA +25.6%A) of respondent agreed with the statement that adaptive software offered personalized learning paths that suited their needs. Furthermore, mean score (3.18) and SD (1.264) of respondents also reflect the opinion in favor of the statement.

Table 11
I Can Easily Interact With my Teachers and Classmates in Online Courses

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	55	76	36	55	87	3.50	1.192
Percentage		23.9	33.0	15.7	23.9	3.5		

Table 11 indicates that 56.9% (23.9%SA +33.0%A) of respondent agreed with the statement that they could easily interact with their teachers and classmates in online courses. Furthermore, mean score (3.50) and SD (1.192) of respondents also reflect the opinion in favor of the statement.

Table 12
I Can Find Educational Apps Helpful for Improving My Skills

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	41	90	26	51	22	3.33	1.266
Percentage		17.8	39.1	11.3	22.2	9.6		

Table 12 indicates that 56.9% (17.8%SA +39.1%A) of respondent agreed with the statement that they could find educational apps helpful for improving their skills. Furthermore, mean score (3.33) and SD (1.266) of respondents also reflect the opinion in favor of the statement.

Table 13
My Performance Data Helps My Teachers to Provide Personalized Feedback

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	51	100	24	43	12	3.59	1.174
Percentage		22.2	43.5	10.4	18.7	5.2		

Table 13 indicates that 65.7% (22.2%SA +43.5%A) of respondent agreed with the statement that their performance data helped their teachers to provide personalized feedback. Furthermore, mean score (3.59) and SD (1.174) of respondents also reflect the opinion in favor of the statement.

Table 14
Online Learning Allows Me to Learn at My Own Pace

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	38	92	34	51	15	3.38	1.186
Percentage		16.5	40.0	14.8	22.2	6.5		

Table 14 indicates that 56.5% (16.5%SA +40.0%A) of respondent agreed with the statement that online learning allowed them to learn at their own pace. Furthermore, mean score (3.38) and SD (1.186) of respondents also reflect the opinion in favor of the statement.

Personalized Learning (Student Centered Practices): Academic Achievements
Table 15
I Enjoy Selecting my Own Learning Methods

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	69	123	16	17	5	4.02	.930
Percentage		30.0	53.5	7.0	7.4	2.2		

Table 15 indicates that 83.5% (30.0%SA +53.5%A) of respondent agreed with the statement that they enjoyed selecting their own learning methods. Furthermore, mean score (4.02) and SD (.930) of respondents also reflect the opinion in favor of the statement.

Table 16
Interest Based Learning Makes Learning More enjoyable for Me

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	64	94	40	22	10	3.78	1.088
Percentage		27.8	40.9	17.4	9.6	4.3		

Table 16 indicates that 68.7% (27.8%SA +40.9%A) of respondent agreed with the statement that interest-based learning made learning more enjoyable for them. Furthermore, mean score (3.78) and SD (1.088) of respondents also reflect the opinion in favor of the statement.

Table 17
I Like Setting My Own Learning Goals

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	62	117	40	7	4	3.98	.851
Percentage		27.0	50.9	17.4	3.0	1.7		

Table 17 indicates that 77.9% (27.0%SA +50.9%A) of respondent agreed with the statement that they liked setting their own learning goals. Furthermore, mean score (3.98) and SD (.851) of respondents also reflect the opinion in favor of the statement.

Table 18
Feedback from My Teachers Helps me to Improve my Work

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	54	123	26	12	15	3.82	1.057
Percentage		23.5	53.5	11.3	5.2	6.5		

Table 18 indicates that 77% (23.5%SA +53.5%A) of respondent agreed with the statement that feedback from their teachers helped them to improve their work. Furthermore, mean score (3.82) and SD (1.057) of respondents also reflect the opinion in favor of the statement.

Table 19
I am More Motivated When I Can Choose the Topic for My Project

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	27	33	14	60	96	2.28	1.427
Percentage		11.7	14.3	6.1	26.1	41.7		

Table 19 indicates that 67.8 % (26.1%DA +41.7%SDA) of respondent disagreed with the statement that they were more motivated when they could choose the topic for their project. Furthermore, mean score (2.28) and SD (1.427) of respondents also reflect the opinion against the statement.

Table 20
Choice Based Projects Inspire Me to be More Creative

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	60	113	37	17	3	3.91	.912
Percentage		26.1	49.1	16.1	7.4	1.3		

Table 20 indicates that 75.2% (26.1%SA +49.1%A) of respondent agreed with the statement that choice-based projects inspired them to be more creative. Furthermore, mean score (3.91) and SD (.912) of respondents also reflect the opinion in favor of the statement.

Personalized Learning (Teacher Facilitated Practices): Academic Achievements
Table 21
I Believe that Coaching Helps Me to Improve My Academic Skills

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	84	68	23	48	7	3.76	1.233
Percentage		36.5	29.6	10.0	20.9	3.0		

Table 21 indicates that 66.1% (36.5%SA +29.6%A) of respondent agreed with the statement that they believed that coaching helped them to improve their academic skills. Furthermore, mean score (3.76) and SD (1.233) of respondents also reflect the opinion in favor of the statement.

Table 22

I Feel more Engaged in School Because of My Mentor's Support

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	40	73	49	56	12	3.32	1.171
Percentage		17.4	31.7	21.3	24.3	5.2		

Table 22 indicates that 49.1% (17.4%SA +31.7%A) of respondent agreed with the statement that they felt more engaged in school because of their mentor's support. Furthermore, mean score (3.32) and SD (1.171) of respondents also reflect the opinion in favor of the statement.

Table 23

Scaffolding has Made it Easier For me to Understand Difficult Concepts

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	91	57	17	40	25	3.65	1.424
Percentage		39.6	24.8	7.4	17.4	10.9		

Table 23 indicates that 64.4% (39.6%SA +24.8%A) of respondent agreed with the statement that scaffolding had made it easier for them to understand difficult concepts. Furthermore, mean score (3.65) and SD (1.424) of respondents also reflect the opinion in favor of the statement.

Table 24

Temporary Support During Learning Activities Helps me to Improve My Skills

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	34	100	52	37	7	3.51	1.027
Percentage		14.0	43.5	22.5	16.1	3.0		

Table 24 indicates that 57.5% (14.0%SA +43.5%A) of respondent agreed with the statement that temporary support during learning activities helped them to improve their skills. Furthermore, mean score (3.51) and SD (1.027) of respondents also reflect the opinion in favor of the statement.

Table 25

Regular Assessments Keep me Engaged in My Learning Process

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	53	105	37	27	8	3.73	53
Percentage		23.0	45.7	16.1	11.7	3.5		23.0

Table 25 indicates that 68.7% (23.0%SA +45.7%A) of respondent agreed with the statement that regular assessments kept them engaged in their learning process. Furthermore, mean score (3.73) and SD (1.052) of respondents also reflect the opinion in favor of the statement.

Table 26

Collaborative Planning between Teachers Helps me in Understanding the Lesson

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	51	89	48	32	10	3.73	1.052
Percentage		22.2	38.7	20.9	13.9	4.3		

Table 26 indicates that 60.9% (22.2%SA +38.7%A) of respondent agreed with the statement that collaborative planning between teachers helps them in understanding the lesson. Furthermore, mean score (3.73) and SD (1.052) of respondents also reflect the opinion in favor of the statement.

Table 26
I Feel More Supported When Teachers Work Together to Plan Instructions

Responses	N	SA	A	N	DA	SDA	Mean	SD
Frequency	230	62	86	26	48	8	3.63	1.185
Percentage		27.0	37.4	11.3	20.9	3.5		

Table 26 indicates that 64.4% (27.0%SA +37.4%A) of respondent agreed with the statement that they felt more supported when teachers work together to plan instruction. Furthermore, mean score (3.63) and SD (1.185) of respondents also reflect the opinion in favor of the statement.

Conclusions

The study reveals several key findings regarding the role of personalized learning in enhancing academic achievements of students at the secondary level. The respondents agree with the statements that: Teachers know how students learn best; Teachers support them if they need more time to understand; Group work helps them learn best; Feedback from teachers helps them improve their work (84%). Adaptive software offers personalized learning paths; Regular assessments keep them engaged in their learning process; Collaborative planning between teachers helps them understand lessons and teachers working together to plan instructions makes them feel more supported. However, the respondents disagreed with some statements like: Teachers use tests to plan lessons for them; They can choose activities according to interest of students; The Learning Management System (LMS) helps them track assignments and grades; They are more motivated when they can choose the topic for their project. The study highlights the importance of personalized learning in enhancing academic achievements of students at the secondary level. By implementing effective personalized learning strategies, teachers can create a supportive learning environment that caters to the diverse needs of students.

Recommendations

Based on the findings, it can be concluded that personalized learning plays a significant role in enhancing academic achievements of students at the secondary level. The respondents appreciate the support of their teachers, group work, feedback, and adaptive software in their learning process. However, there are areas that the school management needs improvement, such as providing students with choices and autonomy in their learning and utilizing LMS effectively. The study suggests that teachers need to focus on creating a supportive learning environment, providing regular feedback, and using technology to enhance student learning outcomes.

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