

Evaluation of Technology Integration in B.Ed. Honors Elementary: A Perspective of Teacher Educators

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Abstract: *The Higher Education Commission (HEC) in 2009 decided to substitute the existing teacher training certificate and diploma programs for a four-year undergraduate training program named B.Ed. Honors Elementary. The purpose of this new program was to train prospective teachers in pedagogy as a lifelong commitment. National Professional Standards for Teachers in Pakistan were introduced by the Federal Ministry of Education. The teacher educational programs' curriculum was revised based on National Professional Standards for Teachers in Pakistan. Along with launching the B.Ed. Honors Elementary program, a National Accreditation Council for Teacher Education (NACTE) was formulated for quality assurance, according to guidelines from Higher Education Commission (HEC). The Evaluation of B.Ed. Honors Elementary Program in the universities of AJ&K was conducted by the researcher considering Stufflebeam's Context, Input, Process, and Product (CIPP) evaluation model. The study was conducted to find gaps through survey method from two population strata i-e the faculty and students of the B.Ed. Honors Elementary program. The study was conducted in five public sector universities of Azad Jammu and Kashmir. The context is related to the needs and values of program, while input deals with the facilitation of resources. The process evaluation deals with the review of teaching and learning strategies in classroom. This study reveals issues faced by faculty and students during implementation of the program. The product evaluation reveals the skills and performance of the prospective teachers in quantity as well as quality. Thus, the study helped highlight the voices that were overlooked during the implementation stage of the program. The study also guided the challenges to be faced during cut-throat competition of skills for next generation during the twenty first century. Based on the findings recommendations were presented.*

Keywords: Technology integration, Edu-tech, Professional development, CIPP model

INTRODUCTION:

The pre-service teacher education programs prepare the prospective teachers for the necessary knowledge, skills, and competencies. Majority of existent PTC/CT primary teachers in the schools of AJK lack proficiency to cope with the usage of educational technology integrated with modern linguistic and scientific contents. Consequently, they cannot employ interactive methodology to make their teaching more effective. The gaps of teachers' competencies in pedagogy were identified after the government of AJ&K introduced English as medium of instruction. As reported by Warwick & Reimer (1995) there were gaps in three out of four areas in teacher competencies except for the knowledge aspect in old PTC, CT and one year B.Ed. programs. Besides, students' literacy needs to be supported by, "Meta dialogues, discuss processes and strategies for assessment and feedback rather than the specifics of a particular piece of work" (Carless & Boud, 2018, p-1316). Along with these transitions, National professional Standards

for Teachers in Pakistan were introduced in 2009 for the teacher education programs in Pakistan. The 2009 education policy document review explained that Old PTC, CT and one year B.Ed. programs lack in competencies of critical thinking, creativity, communication, and collaboration. According to Jeeva, (2018), planners were conscious of the unskillfulness of the PTC/CT certificate holder teachers while preparing students for the attainment of established objectives. According to their views students were taught and tested for their ability to memorize vocabulary. Afshan Huma (2013) elaborated that there needed to design and implement an effective evaluation system in which a culture of internal audit about the use of educational technology integration be monitored for effective outcomes of learnt lessons in information and communication integration with technology.

Educational technology plays a pivotal role in teaching and learning process by helping teachers to develop innovative teaching methods, which enhances prospective teachers' engagement and interest. During current era of information technology prospective teachers can benefit from online courses like webinars and conferences through digital resources connected to the internet. Digital educational tech tools facilitate global connection which expands access to different fields of education for prospective teachers to enable the remote and unprivileged students join learning and by sharing the positive activities with flexible collaboration and accessible opportunities for professional development. Technology is used for teacher training by providing digital learning platforms for virtual and established reality and artificial intelligence (AI) and generative AI.

Educational technology is employed for personalized learning to cater individual needs and to improve personal abilities. These technologies increase the engagements of the trainees to boost the prospective teachers' motivation about planning lessons and hyperlink the desired lessons like a story or scientific process or some experimental activity with the authentic steps. The visual presentation of activities, scenic places, industries, physical or biological process to the learners exerts everlasting effects of retention of knowledge application for the analysis and synthesis of learnt processes.

For collaboration and communication among faculties, prospective teachers and their peers, the digital platform may be provided for handling the delivery of online assignments, courses and materials through integration of educational technology is thought crucial in creating of learning management system. The interactive simulations, videos and podcasts for enhancement of learning experiences are employed through multimedia resources. During program planning specific programs can be organized for individual/special needs students' learning abilities. Moreover, integrated digital technology tools make online performance assessment and timely feedback for rectification of errors and mistakes.

However, there are many challenges and hardships faced in technology integration in the Pakistani digital environment as inequality in accessibility to technology and internet connectivity of border areas adjacent to line of control in AJ&K and low areas of hilly terrain have no internet connectivity. Moreover, the prospective teachers need training to effectively integrate educational technology into teaching practices.

Statement of the problem: The new B.Ed. Honors Elementary program was prepared in line with the National Professional Standards for Teachers in Pakistan. The integration of technology is considered crucial part of new B.Ed. honors program. Although many evaluative studies have been conducted about B.Ed. Honors Elementary trainings in Pakistan, however, there is no evidence of any evaluative study in integration of technology conducted in B.Ed. Honors Elementary program of universities in AJ&K. To bridge this knowledge, gap the researcher carried out this study titled, "Evaluation of Technology Integration in B.Ed. Honors Elementary program" employing Stufflebeam's Context, Input, Process and Product (CIPP) evaluation model.

Objectives:

- I. Examine the context of the Integration of Technology in B.Ed. Honors Elementary as perceived by prospective teachers.

- II. Explore the input interventions for integration of technology into B.Ed. honors elementary scheme of studies.
- III. Investigate process of Integration of Technology in B.Ed. honors Elementary.
- IV. Evaluate the product of technology integration skills among prospective teachers.

Significance of the Study: The change in the National Education Policy of the educational programs in 2009 has suggested reforms in Pakistani teacher education programs. It requires a deep evaluation of the system flaws in the planning of these programs within the activities involved during course production work for B.Ed. honors. Pali, (2021) declares that it is the profound duty of teacher educators involved in B.Ed. Honors program to get key information about the linguistic variations, disposition patterns and theories of the learning and assessment in teacher training institutions, which is the needed goal for transformations in learning and up to date development of the school children.

Delimitation of the Study: the study was delimited to students of B.Ed. honors elementary in five public sector universities of Azad Jammu and Kashmir.

Research Design: A quantitative research methodology was employed to examine generalizable assessment. An evaluative research design was adopted using Context, Input, Process, and Product (CIPP) evaluation model for evaluation of B.Ed. Honors Elementary Program in universities of Azad Jammu and Kashmir. A survey design method has been used to investigate working behaviors of students about four-year B.Ed. Honors Elementary program.

Population of the Study: There were 939 B.Ed. Honors Elementary students studying in universities of AJ&K at B. Ed. Honors Elementary level. The study comprised of all 939 students of five public sector universities in Azad Jammu and Kashmir state.

Sampling: Due to quantitative nature of study, the researcher employed simple random sampling technique for choosing 50% students selected as per guidelines of Gay (2009). There were 470 out of 939 students (50%) selected through simple random techniques of B.Ed. Honors Elementary from each university of Azad Jammu and Kashmir, as a sample.

Research Instruments: The questionnaires (for teachers and students) were developed based on content analysis of previous evaluative studies while employing the Context, Input, Process, and product CIPP evaluation model by Stufflebeam (2002). These tools were of closed ended statements related to (1) Context, (2) Input, (3) Process, and (4) Product of B.Ed. honors Elementary program which were rated on five- point Likert type scale.

Validity of the Questionnaire: The questionnaires were revised according to the input provided by the subject-experts concerned of the faculty of education Hazara University Mansehra and Azad Jammu and Kashmir for validity. A few statements were amended and some of these were dropped from the list of questionnaire statements so that an applicable list of questionnaire statements be presented to the sample respondents.

Pilot Testing of the Questionnaire: The Questionnaire was administered initially to a sample of 20 respondents. This segment of population was excluded in the research sample afterwards. Data was collected for the pilot testing to check validity of the questionnaire. Changes and amendments were made as advised by the respondents and experts accordingly.

Reliability: Reliability was tested through Cronbach Alpha for each segment of CIPP separately. The coefficient of consistency of Context was 0.914 for 15 items, which is greater than 0.7. So, it was considered reliable. The coefficient of Cronbach Alpha for Input was 0.894 for 18 items, the Cronbach alpha coefficient of Process was 0.947 for 39 items and the Cronbach Alpha coefficient of Product was 0.932 for 18 items. The collective reliability of all the statement items of the questionnaire on Cronbach alpha was 0.969 for 90 items shows the reliability for internal consistency of total items in questionnaire.

Data Analysis and Interpretation: After getting permission from heads of institutes /departments, the questionnaires were administered to the population (students of B.Ed. Honors in the Universities) for

responses. The questionnaires were delivered by hand on first day and respondents were given one day gap to fill up while they were given researcher's mobile contact number for inquiry about any confusion especially from students of B.Ed. Honors Elementary. On the following day many statements were made to the students, and then complete questionnaires were taken back. Every statement item was analyzed for (Context, Input, Process, and Product) according to statistical analysis and inferential statistics used and standard deviation of each component of CIPP model evaluation. The research study was conducted as an evaluation of B.Ed. Honors Elementary program in the universities of Azad Jammu and Kashmir.

This evaluative study was carried out by using CIPP (Context. Input, Process and Product) model of evaluation presented by Denial Stufflebeam. The data was collected based on responses of the research sample about each segment of separate statements of the CIPP (Context, Input, Process and Product) questionnaire on five-point Likert type scale. Out of 470, only 441 students responded. Thus, the response ratio was 94% of the respondents which was encouraging.

Table No 1: Context Evaluation of Technology Integration

S. No.	Statement	SA	Ag	UC	DA	S. DA	Mean	x2	p- value
01	The B.Ed. Honors program is based on National Professional Standards Teachers.	142 34%	162 39%	09 2%	36 9%	72 17%	3.63	208.08	.00
02	B.Ed. Honors needs to prepare teachers in technology for classroom application.	125 30%	179 43%	35 8%	24 6%	58 9%	3.68	206.44	.00
03	B.Ed. honors trained teachers have learnt technology to meet standards.	96 23%	141 34%	70 17%	58 14%	56 13%	3.38	59.96	.00
04	B.Ed. Honors Elementary students learn use of technology for 21 st century skills.	125 30%	175 41%	66 16%	24 6%	33 8%	3.80	191.53	.00
05	B.Ed. Honors program objectives are to prepare multi-skilled technologically.	134 32%	166 39%	65 15%	22 5%	34 8%	3.81	189.17	.00
06	The competencies of prospective teachers are to be experts in integrated technology.	110 26%	152 36%	80 19%	28 7%	51 12%	3.70	113.31	.00
07	B.Ed. Honors is a lifelong learning program with innovations and technical expertise.	102 42%	188 45%	58 14%	27 6%	46 11%	3.64	196.06	.00

The table above shows that in response to the statement, "The aims of B.Ed. Honors Elementary program are based on National Professional Standards for Teachers in Pakistan", 73% of the respondents agreed; while 26% disagreed with the statement; another 2% were uncertain about the statement (SA=34%, AG=39%, UC=2%, DA=9% SDA=17%, M=3.63). The value of $\chi^2=208.08$, and $P<0.05$ indicate that respondents significantly agreed with the statement.

In response to statement, "The B.Ed. Honors Elementary program The B.Ed. Honors program B.Ed. Honors Elementary needs to prepare teachers to use technology for classroom application", 73% of the respondents agreed to the statement, 15% disagreed to the statement while 8% were irrelevant (SA=30%, A=43%, UC=8%, DA=6%, SDA=9%, M=3.68). The value of $\chi^2=206.44$ and value of $p<0.05$ indicate that respondents significantly agreed with the statement.

Responding to the statement, "B.Ed. honors trained teachers have learnt technology to meet standards", 57% of the B.Ed. Honors students agreed; 29% respondents disagreed; while 17% were irrelevant (SA=23%, A=34%, UC=7%, DA=14%, SDA=13%, M=3.38, $\chi^2=59.96$, $p>0.05$). The value of $\chi^2=59.96$ refers to goodness of fit and value of $p<0.05$ indicate that respondents are significantly agreed with the statement.

Responding to the statement that, "B.Ed. Honors Elementary program B.Ed. Honors Elementary students learn use of technology for 21st century skills", 71% respondents were agreed; 14% disagreed; 16% were uncertain (SA=30%, A=41%, UC=16%, DA=6%, SDA=8%, M=3.80 $\chi^2=191.53$, $p>0.05$). The value of $\chi^2=191.53$ and value of $p<0.05$ indicate that respondents were significantly agreed with the statement.

While responding to statement, “The B.Ed. Honors program objectives are to prepare multi skilled technologically”, 71% of the B.Ed. Honors Elementary respondents were agreed; 13% respondents disagreed, while 15% respondents were uncertain. (SA=32%, A=39%, UC=15%, DA=5%, SDA=8%, M=3.81, $\chi^2=189.17$, $p>0.05$). The value of $\chi^2=189.17$ and value of $p<0.05$ indicate that respondents were significantly agreed with the statement.

In response to statement, “The desired competencies of prospective teachers are to be expert in integrated educational technology”, 62% of the B. Ed. Honors students agreed; 19% of the respondents disagreed; 19% respondents were uncertain of the core competencies (SA=26%, A=36%, UC=19%, DA=7%, SDA=12%, M=3.70 $\chi^2=113.31$, $p>0.05$). The value of $\chi^2=113.31$ and value of $p<0.05$ indicate that respondents were significantly agreed with the statement.

In response to the statement, “B.Ed. Honors is a lifelong learning program with innovations and technical expertise”, 87% of the B.Ed. Honors students agreed; 17% of the respondents disagreed; while 14% were uncertain (SA=42%, A=45%, UC=14%, DA=6%, SDA=11%, M=3.64, $\chi^2=196.06$; $p>0.05$). The value of $\chi^2=196.06$ and value of $p<0.05$ indicate that respondents were significantly agreed with the statement.

Table No.02: Input Evaluation of Integration Technology in B.Ed. honors Elementary

S.#	Statement	SA	AG	UC	DA	SDA	Mean	χ^2	p-Value
01	The chapters of curriculum contents are integrated with technology.	137 33%	159 38%	40 10%	20 5%	65 15%	3.69	176.09	.00
02	Information technology is included in B.Ed. honors.	108 26%	156 37%	55 13%	42 10%	60 14%	3.49	106.18	.00
03	The internet are accessible to download and read.	106 25%	170 40%	56 13%	40 10%	49 12%	3.57	140.43	.00
04	The Edu-tech provision matches the needs.	123 29%	172 41%	56 13%	23 6%	47 11%	3.71	179.79	.00
05	Laboratories are equipped with audio visual aids	98 23%	166 39%	61 15%	52 12%	44 11%	3.52	119.62	.00
06	Each semester with prescribed IT courses provides practices.	119 28%	176 42%	56 13%	27 6%	43 10%	3.71	182.93	.00
07	The semester course outlines are integrated with prescribed technology activities.	156 37%	163 39%	43 10%	18 4%	41 10%	3.89	229.34	.00
08	Laptop provision enhanced students' capacity in Educational technology.	138 33%	139 33%	48 11%	24 6%	72 17%	3.35	130.41	.00

In response to the statement, “The chapters of curriculum contents are integrated with technology”, 71% students agreed; 20% disagreed; while 10% were uncertain (SA=33%, A=38%, UC=10%, DA=5%, SDA=15%, M=3.69 $\chi^2=176.09$, $p<0.05$). The value of $\chi^2=176.09$ and value of $p<0.05$ indicate that respondents were significantly agreed with the statement.

In response to statement, “The information technology included in B.Ed. honors”, 63% students agreed; 24% disagreed; while 13% were uncertain (SA=26%, A=37%, UC=13%, DA=10%, SDA=14%, M=3.49, $\chi^2=106.09$, $p<0.05$). The value of $\chi^2=176.09$ and value of $p<0.05$ indicate that respondents significantly agreed with the statement.

In response to statement, “The internet are accessible to download and read”, 65 % students agreed; 22% disagreed; while 13% were uncertain (SA=25%, A=40%, UC=13%, DA=10%, SDA=12%, M=3.57, $\chi^2=140.43$, $p<0.05$). The value of $\chi^2=176.09$ and value of $p<0.05$ indicate that respondents significantly agreed with the statement.

In response to statement, “The provision of educational technology matches the needs”, 70% students agreed; 17% disagreed; while 13% were uncertain (SA=29%, A=41%, UC=13%, DA=06%, SDA=11%, M=3.71 $\chi^2=179.39$, $p<0.05$). The value of $\chi^2=179.39$ and value of $p<0.05$ indicate that

respondents significantly agreed with the statement.

In response to statement, “The laboratories are equipped with audio visual aids”, 62% students agreed; 21% disagreed; while 11% were uncertain (SA=23%, A=39%, UC=15%, DA=12%, SDA=11%, $M=3.52$ $x^2=119.62$, $p<0.05$). The value of $x^2=119.62$ and value of $p<0.05$ indicate that respondents significantly agreed with the statement.

In response to statement, “Each semester with prescribed IT courses provides practices”, 70% students agreed; 16% disagreed; while 13% were uncertain (SA=28%, A=42%, UC=13%, DA=6%, SDA=10%, $M=3.71$ $x^2=182.93$, $p<0.05$). The value of $x^2=182.93$ and value of $p<0.05$ indicate that respondents significantly agreed with the statement.

In response to statement, “The semester course outlines are integrated with prescribed technology activities”, 76% students agreed; 14% disagreed; while 10% were uncertain (SA=37%, A=39%, UC=10%, DA=4%, SDA=10%, $M=3.89$ $x^2=229.34$, $p<0.05$). The value of $x^2=229.34$ and value of $p<0.05$ indicate that respondents significantly agreed with the statement.

In response to statement, “Laptop provision enhanced students’ capacity in Educational technology.”, 66% students agreed; 23% disagreed; while 11% were uncertain (SA=33%, A=38%, UC=10%, DA=5%, SDA=15%, $M=3.35$ $x^2=130.41$, $p<0.05$). The value of $x^2=130.41$ and value of $p<0.05$ indicate that respondents significantly agreed with the statement.

Table No.3: Process Analysis of Technology Integration of Universities in AJ&K.

S. No.	Statement	SA	A	UC	DA	SDA	x^2	Mean	p-value
01	The audio-visual presentation of contents involves the student teacher.	113 27%	196 47%	50 12%	21 5%	41 24%	241.79	3.75	0.00
02	Educational technologies are used for long-lasting effects in practical skills.	113 27%	180 43%	66 16%	24 6%	38 9%	191.17	3.72	0.00
03	Technology integrated digital practical experiments enhances learning outcomes.	118 28%	176 42%	63 15%	12 3%	52 12%	193.21	3.70	0.00
04	While listening to an audio/video, students are directed to mark an audio/video part.	97 23%	145 34%	86 20%	39 9%	54 13%	89.98	3.45	0.00
05	Technology assisted lesson plans affect the pedagogical competence of teachers.	153 36%	166 39%	56 13%	18 4%	28 7%	234.68	3.49	0.00
06	I like taking notes on a digital device during class practical.	103 25%	155 37%	63 15%	37 9%	63 15%	100.86	3.47	0.00
07	I enjoy learning while lecturer integrates audio-visuals in the experiment teaching.	138 33%	159 38%	59 14%	19 5%	46 10%	176.18	3.76	0.00
08	I have access to digital communication videos for subject matter knowledge.	123 29%	174 41%	58 14%	22 5%	44 11%	186.94	3.73	0.00
09	I am eager to enquire about Edu-tech integrated scientific theories and ideas in class.	100 24%	198 47%	82 20%	23 6%	18 4%	253.35	3.80	0.00
10	I used to learn online during lockdown and can present projects online.	98 23%	177 42%	65 15%	40 10%	41 10%	154.28	3.59	0.00
11	I write assignments with reviews and references using google scholar.	104 25%	168 40%	73 17%	30 7%	46 11%	141.76	3.60	0.00
12	I learn to communicate effectively using e-mails and google.	118 28%	165 39%	60 14%	30 7%	48 11%	148.51	3.65	0.00
13	I learn to utilize teaching materials from the google and internet.	123 29%	159 38%	75 18%	20 5%	44 11%	153.47	3.70	0.00
14	I learn to identify and utilize specific software skills in my lesson plan.	109 26%	169 40%	69 16%	29 7%	45 11%	149.89	3.63	0.00

Table above shows that in response to the statement, “The audiovisual presentation of contents involves the student teacher”, 73% students agreed to the statement, 15% students disagreed to the statement

while 12% were uncertain about the statement (SA=27%, A=47%, UC=12%, DA=5%, SDA=24%, M=3.75, $\chi^2=241.79$, $p<0.05$) The value of ($\chi^2=241.79$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

In response to statement, "Educational technology are used for long lasting effects in the practical skills", 70% students agreed that slides create long lasting effects, 15% students disagreed to the statement while 16% were uncertain about the statement (SA=27%, A=43%, UC=16%, DA=6%, SDA=9%, M=3.72, $\chi^2=191.17$, $p<0.05$). The value of ($\chi^2=191.17$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

Responding to statement, "Technology integrated digital practical experiments enhances learning outcomes", about 70% students agreed that providing discussion opportunities helps in self-discovery; 6% students disagreed to the statement while 20% were uncertain about the statement (SA=28%, A=42%, UC=15%, DA=3%, SDA=3%, M=3.70, $\chi^2=193.21$; $p<0.05$). The value of ($\chi^2=134.92$) and p-value is ($P<0.05$) which indicate that the respondents' agreement with the statement was significant.

In response to statement, "While listening an audio/video, students are directed to mark an audio/video part (i.e., make note of a special point in the video timeline so you can add a note to it or easily find the point in the video words", 57% students agreed to the statement, 22% students disagreed to the statement while 20% were uncertain about the statement (SA=23%, A=34%, UC=20%, DA=9%, SDA=13%, M=3.45, $\chi^2=89.98$; $p<0.05$). The value of ($\chi^2=89.98$) and p-value is ($P<0.05$), which indicates that the respondents' agreement with the statement was significant.

In response to the statement, "Technology assisted lesson plans effects the pedagogical competence of teachers", 75% respondents agreed; 11% respondents disagreed; while 13% were uncertain about the statement (SA=36%, A=39%, UC=13%, DA=4%, SDA=7%, M=3.49, $\chi^2=234.68$, $p<0.05$). The value of ($\chi^2=234.68$) and p-value is ($P<0.05$) which indicate that the respondents' agreement with the statement was significant.

In response to the statement, "I like taking notes on a digital device during class practical", 62% respondents agreed; 24% respondents disagreed; while 15% were uncertain about the statement (SA=25%, A=37%, UC=15%, DA=9%, SDA=15%, M=3.47, $\chi^2=100.86$; $p<0.05$). The value of ($\chi^2=100.86$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

While commenting on the statement, "I enjoy learning while lecturer integrates audio- visuals in the experimental teaching", 71% respondents agreed; 15% respondents disagreed; while 14% were uncertain about the statement (SA=33%, A=38%, UC=14%, DA=5%, SDA=10%, M=3.76, $\chi^2=176.18$, $p<0.05$). The value of ($\chi^2=176.18$) and p-value is ($P<0.05$) which indicates that the respondents' agreement with the statement was significant.

In response to the statement, "I have access to digital communication videos for subject matter knowledge", 66% respondents agreed; 20% respondents disagreed; while 13% were uncertain about the statement (SA=25%, A=41%, UC=13%, DA=10%, SDA=11%, M=3.60,

$\chi^2=152.07$; $p<0.05$). The value of ($\chi^2=152.07$) and p-value is ($P<0.05$) which indicates that the respondents' agreement with the statement was significant.

In option of responses about the statement, "I am eager always in enquiry about concepts, theories and idea in class", 71% respondents agreed; 10% respondents disagreed; while 19% were uncertain about the statement (SA=24%, A=47%, UC=20%, DA=6%, SDA=4%, M=3.80, $\chi^2=253.35$; $p<0.05$). The value of ($\chi^2=253.35$) and p-value is ($P<0.05$) which indicates that the respondents' agreement with the statement was significant.

Responding to the statement, "I use to learn online during lockdown and can present projects online",

65% respondents agreed; 19% respondents disagreed; while 15% were uncertain about the statement (SA=23%, A=42%, UC=15%, DA=10%, SDA=10%, M=3.59, $\chi^2=154.28$, $p<0.05$). The value of ($\chi^2=154.28$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

In response to inquiry about, "I write the assignments with reviews and references using google scholar", 65% respondents agreed; 18% respondents disagreed; while 17% were uncertain about the statement (SA=25%, A=40%, UC=17%, DA=7%, SDA=11%, M=3.60, $\chi^2=141.75$; $p<0.05$). The value of ($\chi^2=141.75$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

In response to the statement, "I learn to communicate effectively using e-mails and google", 67% respondents agreed; 19% respondents disagreed, while 14% were uncertain about the statement (SA=29%, A=38%, UC=14%, DA=7%, SDA=11%, M=3.75, $\chi^2=148.51$; $p<0.05$). The value of ($\chi^2=148.51$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

In reply to the statement, "I learn to utilize teaching learning materials from the google and internet", 67% respondents agreed; 15% respondents disagreed; while 18% were uncertain about the statement (SA=29%, A=38%, UC=18%, DA=5%, SDA=11%, M=3.70, $\chi^2=153.47$; $p<0.05$). The value of ($\chi^2=153.47$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

In response to the statement, "I learn to identify and utilize specific software skills in my lesson plan", 66% of the respondents agreed; 18% of respondents disagreed; while 16% were uncertain about the statement (SA=26%, A=40%, UC=16%, DA=7%, SDA=11%, M=3.63, $\chi^2=149.89$; $p<0.05$). The value of ($\chi^2=149.89$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

Table No.4: Product Evaluation B.Ed. Honors Elementary in Technology Integration

S.#	Statement	SA	A	UC	DA	SDA	χ^2	Mean	p-value
01	I understand basic concepts of computer and describe the function keys.	128 30%	164 39%	61 15%	21 5%	47 11%	168.67	3.72	.00
02	I learnt skills of MS word in classroom application.	126 30%	147 35%	78 19%	21 5%	49 12%	130.20	3.66	.00
03	Edu-tech training of teacher can transform classroom as a professional learning center.	115 37%	169 40%	64 15%	27 6%	46 11%	157.70	3.66	.00
04	I have ability in application of educational technology for teaching of science.	118 28%	176 42%	67 16%	17 4%	43 10%	190.96	3.73	.00
05	I have ability using ICT in planning lessons via google.	112 27%	185 44%	73 17%	23 6%	28 7%	213.33	3.78	.00
06	Edu-tech helps in delivery of teaching four language skills.	157 37%	162 39%	52 12%	10 3%	40 10%	235.73	3.91	.00

In response to the statement, "I understand basic concepts of computer and can describe the function keys", 69% students agreed to the statement; 16% students disagreed to the statement while 15% were uncertain about the statement (SA=30%, A=39%, UC=15%, DA=5%, SDA=11%, M=3.72), $\chi^2=168.67$; $p<0.05$. The value of ($\chi^2=168.67$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

Responding to the statement, "I learnt skills of MS word in classroom application", 65% students agreed to the statement, 17% students disagreed to the statement while 19% were uncertain about the statement (SA=30%, A=35%, UC=19%, DA=5%, SDA=12%, M=3.66), $\chi^2=130.20$; $p<0.05$. The value of

($\chi^2=130.20$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

In response to the statement, "Edu-tech training of teacher can transform classroom as a professional learning center", 68% students agreed to the statement; 17% students disagreed to the statement while 15% were uncertain about the statement (SA=37%, A=40%, UC=15%, DA=6%, SDA=11%, $M=3.66$), $\chi^2=157.70$; $p<0.05$. The value of ($\chi^2=157.70$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

In response to the statement, "I have ability in application of educational technology for teaching of science", 70% students agreed to the statement 4% students disagreed to the statement while 16% were uncertain about the statement (SA=28%, A=42%, UC=16%, DA=4%, SDA=10%, $M=3.73$), $\chi^2=190.96$; $p<0.05$. The value of ($\chi^2=190.96$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

In response to statement, "I have ability using ICT in planning lessons via google", 71% students agreed to the statement, 12% students disagreed to the statement while 17% were uncertain about the statement (SA=27%, A=44%, UC=17%, DA=6%, SDA=7%, $M=3.78$), $\chi^2=213.33$; $p<0.05$. The value of ($\chi^2=213.33$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

In response to the statement, "Edu-tech helps in delivery of teaching four language skills", 76% students agreed to the statement; 12% students disagreed to the statement while 12% were uncertain about the statement (SA=37%, A=39%, UC=12%, DA=3%, SDA=10%, $M=3.91$), $\chi^2=235.73$; $p<0.05$. The value of ($\chi^2=235.73$) and p-value is ($P<0.05$), which indicate that the respondents' agreement with the statement was significant.

FINDINGS:

Findings Related to Context Integration of Technology

- i. More than two thirds (73%) of the prospective teachers confirmed (SA=34%, AG=39%,) while one fourth repelled (DA=9%, SDA=17%) that B.Ed. Honors Elementary program was based on National Professional Standards for Teachers in Pakistan.
- ii. More than two thirds (73%) of the prospective teachers confirmed (SA=30%, A=43%, $M=3.68$, $\chi^2=206.44$, $p<0.05$) that the B.Ed. Honors program B.Ed. Honors Elementary needs to prepare teachers to use technology for classroom applications.
- iii. Nearly three fifths (57%) of the prospective teachers (SA=23%, A=34%, $M=3.38$, $\chi^2=59.96$, $p>0.05$) were trained and have learnt technology to meet standards. On the other hand, nearly one third (29%) were not fully trained in use of educational technology.
- iv. More than two thirds (71%) of the prospective teachers (SA=30%, A=41%, $M=3.80$, $\chi^2=191.53$, $p>0.05$) have learnt use of technology for 21st century skills in B.Ed. Honors Elementary program. The value of $\chi^2=191.53$ and value of $p<0.05$ indicate that most respondents had significantly proved themselves efficient in integration of technology.
- v. More than two thirds (71%) of the prospective teachers (SA=32%, A=39%, $M=3.81$, $\chi^2=189.17$, $p>0.05$) are prepared in objectives of multi skilled, technologically, during B.Ed. Honors program. The value of $\chi^2=189.17$ and value of $p<0.05$ indicate variation from prospective teachers.
- vi. Majority (87%) of the prospective teachers (SA=42%, A=45%, $M=3.64$, $\chi^2=196.06$; $p>0.05$) declared B.Ed. Honors as a lifelong learning program with innovations and technical expertise.

Findings Related to Input of Integration of Technology

- i. More than two thirds (71%) of the prospective teachers (SA=33%, A=38%, M=3.69 $\chi^2=176.09$, $p<0.05$) described that curriculum contents of B.Ed. honors were integrated with educational technology. On the other hand, 20% denied integration.
- ii. Nearly two thirds (63%) of the prospective teachers (SA=26%, A=37%, M=3.49, $\chi^2=106.09$, $p<0.05$) accepted the inclusion of information technology in B.Ed. honors. While 24% refuted the inclusion of information technology.
- iii. Nearly two thirds (65%) of the prospective teachers (SA=25%, A=40%, M=3.57, $\chi^2=140.43$, $p<0.05$) had accessibility to internet for download and read while one fifth while denied any accessibility to internet.
- iv. More than two thirds (70%) of the prospective teachers (SA=28%, A=42%, M=3.71 $\chi^2=182.93$, $p<0.05$) were provided practices in each semester with prescribed IT courses.
- v. More than three fourths (76%) of the prospective teachers (SA=37%, A=39%, M=3.89 $\chi^2=229.34$, $p<0.05$) approved the integration of semester course outlines with prescribed technology activities.
- vi. Nearly two thirds (66%) (SA=33%, A=38%, M=3.35 $\chi^2=130.41$, $p<0.05$) of the prospective teachers' capacity in educational technology enhanced due to laptop provision. While 23% had no effect on provision of laptops.

Findings Related to Process of Integration of Technology:

- i. Nearly three fourths (73%) of the prospective teachers (SA=27%, A=47%, M=3.75, $\chi^2=241.79$, $p<0.05$) declared that they are involved in audio video presentation of the contents.
- ii. Nearly three fourths (70%) of the prospective teachers (SA=28%, A=42%, M=3.70), $\chi^2=193.21$; $p<0.05$) declared technology integrated digital practical experiments improve enhancement of learning outcomes.
- iii. Nearly three fourths (75%) of the prospective teachers (SA=36%, A=39%, M=3.49, $\chi^2=234.68$, $p<0.05$) confirmed that technology assisted lesson plans effects the pedagogical competence.
- iv. Nearly three fourths (71%) of the prospective teachers (SA=33%, A=38%, M=3.76, $\chi^2=176.18$, $p<0.05$) enjoyed learning while lecturer integrated audio-visuals with the practicum.
- v. Nearly three fourths (71%) of the prospective teachers (SA=24%, A=47%, M=3.80, $\chi^2=253.35$; $p<0.05$) were eager in enquiry about concepts, theories and ideas in class.
- vi. Two thirds (67%) prospective teachers (SA=29%, A=38%, M=3.75, $\chi^2=148.51$; $p<0.05$) learn to communicate effectively using e-mails and google, while one fifth (19%) of the prospective teachers had no opportunity.
- vii. Two thirds (66%) prospective teachers (SA=26%, A=40%, M=3.63), $\chi^2=149.89$; $p<0.05$ learnt to identify and utilize specific software skills in their lesson plan, while one fifth (18%) of prospective teachers had not learnt software skills.

Findings Related to Product Integration of Technology

- I. More than two thirds (69%) prospective teachers (SA=30%, A=39%, M=3.72), $\chi^2=168.67$; $p<0.05$) understood basic concepts of computers and can describe the function keys.
- II. Nearly two thirds (65%) of the prospective teachers (SA=30%, A=35%, M=3.66), $\chi^2=130.20$; $p<0.05$) learnt skills of MS words in classroom application while nearly one fifth (17%) were

lacking MS word skills.

- III. More than two thirds (68%) prospective teachers (SA=37%, A=40%, M=3.66, $\chi^2=157.70$; $p<0.05$) in Edu-tech training of teachers can transform classroom as a professional learning center while nearly one fifth (17%) were lacking while not able to make classroom, a professional learning center.
- IV. More than two thirds (71%) of prospective teachers (SA=27%, A=44%, M=3.78), $\chi^2=213.33$; $p<0.05$) have created ability in ICT for planning lessons via google.
- V. More than three fourths (76%) of the prospective teachers (SA=37%, A=39%, M=3.91, $\chi^2=235.73$; $p<0.05$) described that Edu-tech helps in delivery of teaching four language skills.

DISCUSSION

The current research study aimed to investigate integration of technology in B.Ed. Honors Elementary program with NPSTP as developed by HEC. The study focused on assessing prospective teachers' skills in integration of technology during training of B.Ed. Honors Elementary program in the universities of Azad Jammu and Kashmir using CIPP model designated by Stufflebeam (2002b). This evaluative study decides worth of degree awarding institutions students, involved in training to acquire the desired technology training. Asadiet.al. (2016) described that evaluation deals with the situation that how the students have attained a specific level of success and what levels of knowledge fulfilment were achieved. The objectives of the study were: to explore the need, value, demands and aspirations of the prospective teachers for attaining the existing gaps in Edu-tech, by evaluating the curricular, infrastructural, and academic facilitations from the various stakeholders involved in launching new B.Ed. Honors Elementary program. Furthermore, the third objective of the research was to monitor and evaluate the ongoing Edu-tech activities and strategic inclusion of integration of technology in training programs. The fourth objective of this integration study was to assess the learning outcomes of technology integration, learnt by prospective teachers. The data on context evaluation reveals that majority qualified prospective teachers admitted that newly launched B.Ed. Honors Elementary program is well equipped to meet the 21st century core skills of technology integration needed to meet the multifaceted needs. A similar study was conducted by Munshi, Bhutti, and Irum (2012) about achievements and challenges of B.Ed. Honors Elementary program, in which the scholars described the standardized scheme of studies, set of pedagogical courses, subject contents of disciplines, field experiences and school practicums were endorsed by NCRC and HEC were applied in universities. The current study evaluates the effectiveness of technology integration by prospective teachers engaging students skillfully by Edu-tech integrated learning processes.

The findings of input reveal the technological facilitations provided to make the courses understandable through integrated technology. The results reveal from the findings that more than three-fourths of prospective teachers had accessibility of courses to download electronically and employed using computer as an ICT tool. Most of the prospective teachers were trained in taking notes on a digital device, two thirds of prospective teachers had improved pedagogical skills through access to extra educational materials through websites, or videos, learnt to communicate effectively using e-mail and google and utilize teaching materials from the google and internet to learn online and had built capability to present projects online.

Conclusions:

The present research study has concluded that although most of the prospective teachers have learnt the integrated technology in B.Ed. honors' Elementary program, however nearly one fourths of prospective teachers have lagged behind their peers in application of integrated technology it was observed that they are needed to be re-trained in integrated technology, one fifth have no accessibility to internet had negated matching competencies in Edu-tech ,one fourth have denied information about integrated

technology and lacked facility of laptop. Although nearly three fourths of prospective teachers had been involved in preparing Audio-visual aids presentations, have improved themselves in technological learning outcomes however, one fifth of these have not utilized audio-visual aids, had no access to digital communication for learning online preparation of assignments or had no ability to utilize google platform, lacking MS word or other software skills in teaching/ learning materials. Another one fifth were lacking in integration of technology to make classrooms a professional learning center. One fourth of prospective teachers disliked taking notes on digital devices like tablets and laptops. This attitude reveals their level of interest in digital technology utilization.

Recommendations:

After observation of conclusion, it is recommended that: as per instructions of Higher Education Commission the universities plan for provision of educational technology facilitation to education departments. Furthermore, every university's department of education may arrange the practicums of using educational technology individually by every prospective teacher in the classroom presentation. Moreover, there should be courses arranged for the maintenance of educational technology by repairing integrated technology equipment to prevent them from deterioration. Faculty may arrange funds for periodic upgradation of the technological equipment and linking the various departments through networking and organizing competitions of technological integration to enhance the competence of prospective teachers in integrated technology application for coordination, collaboration and globalized peer learning of the various subject disciplines.

References

- Asadi, M., Reza, G., Akbari, R. & Ghafar, R. (2016). Program evaluation of the New English Textbook (prospect 1) in the Iranian Ministry of Education. *Theory and Practice in Language Studies*, 6(2), 291-301.
- Carless, D., & Boud, D. (2018). The development of student feedback literacy: enabling uptake of feedback. *Assessment & Evaluation in Higher Education*, 43(8), 1315-1325.
- Gay, L. R. & Alrasian P.W. (2003). Educational Research: Competencies for Analysis and Application. Beverly Hill, CA: Sage Publications.
- Government of Pakistan (2009). National Education Policy 2009. Ministry of Education, Islamabad, Pakistan.
- Huma, A. (2013). Adaptable Program Evaluation Strategies for Teacher Education in Pakistan: A reflective paper written on the bases of literature review and document analysis; *International Journal of Humanities and Social Science* 3(7), 298.
- Jeeva, S. (2018) Steps towards Improving the of Pakistan's Education System. The Reformer, <http://reformer.pakistan ASCD.org>.
- Ministry of Federal Education and Professional Training (2017b) Curriculum Supplement on Value Education, Islamabad: Government of Pakistan.
- Munshi, P., Bhatti, T., & Irum, S. (2012). New Teacher Education Programs: B.Ed. (Honors)' Elementary 4-Year & ADE 2-Year Program: Achievements and Challenges: *The Sindh Journal of Education* Vol. 42 Issue 2012-13, Pp.31-39.
- Pali, J. (2021). Effect of Flipped Classroom Teaching on Metacognition Classroom
- Stufflebeam, D. L. (2002). The CIPP model for evaluation. In D.L. Stufflebeam, C.F. Madam & T. Kellaghan (Eds.), *Evaluation models* (pp. 279-317). New York: Kluwer Academic Publishers.
- Stufflebeam, D. L. (2002b). The CIPP model for evaluation. In D.L. Stufflebeam, C.F. Madam & T. Kellaghan (Eds.), *Evaluation models* (pp. 279-317). New York: Kluwer Academic Publishers. Boston.
- Warwick, D., & Reimer, F., (1995). *Hope or despair...?* Praeger, Westport