

EDUCATIONAL INTERVENTION THROUGH COMPUTER BASED MODULE FOR APPAREL CONSTRUCTION

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Abstract : In this age of Communication information and wide access to it considered as wealth. One of the keys to such a source lies in the application of information retrieval techniques which have contributed a lot for the emergence of new Communication technologies. But the use of the word 'new' is not appropriate; technologies are not new, but remarkable transformations have taken place in their application of Communication. They are now available for mass consumption. These technologies have been defined as a micro-electronic system, incorporating computers and telecommunications. ICT (information and communications technology or technologies) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as video conferencing and distance learning. In such a scenario, education, which always plays a critical role in any economic and social growth of a country, becomes even more important. Education not only increases the productive skills of the individual but also his/her earning power. It gives them a sense of well being as well as capacity to absorb new ideas, increases their social interaction, gives access to improved health and provides several more intangible benefits.

When such technologies are used for educational purposes, namely to support and improve the learning of students and to develop learning environments, ICT can be considered as a subfield of Educational Technology. In this study data were collected from college going girl students of B.A. second year and B.A. third year (age group 18-24) of Vasant Kanya Mahavidyalaya and Arya Mahila Degree College of Varanasi district. Which is affiliated to Banaras Hindu University. There was multi stage sampling method. Selection of college was purposive sampling method. Total 191 respondents were selected for this study. Data were collected through self structured questionnaire. This study is based on to empower girls through training and assessment about clothing construction technique. The rate of increase in average knowledge score is found to be significantly of similar pattern because no significant difference is observed between Computer based training and manual based training during pre, intervention and follow up first and second respectively. It was also noted that no significant difference in knowledge level between computerized C.D. and manual booklet provided students during pre intervention as well as first and second follow up regarding , taking body measurement, cutting, drafting and paper patter making respectively. It can say in other words both type of educational materials significantly have similar efficiency to provided knowledge regarding these matter to the students.

Key Words : Communication, information, Computer based training, pattern, measurement.

In this age of Communication information and wide access to it considered as wealth. One of the keys to such a source lies in the application of information retrieval techniques which have contributed a lot for the emergence of new Communication technologies. But the use of the word 'new' is not appropriate; technologies are not new, but remarkable transformations have taken place in their application of Communication. They are now available for mass consumption. These technologies have been defined as a micro-electronic system, incorporating computers and telecommunications. ICT (information and communications technology - or technologies) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as video conferencing and distance learning.

When such technologies are used for educational purposes, namely to support and improve the learning of students and to develop learning environments, ICT can be considered as a subfield of Educational Technology. ICTs in higher education are being used for developing course material; delivering content and sharing content; communication between learners, teachers and the outside world; creation and delivery of presentation and lectures; academic research; administrative support, student enrolment etc. In the current information society, people have to access knowledge via ICT to keep pace with the latest developments. In such a scenario, education, which always plays a critical role in any economic and social growth of a country, becomes even more important. Education not only increases the productive skills of the individual but also his/her earning power. It gives them a sense of well being as well as capacity to absorb new ideas, increases their social interaction, gives access to improved health and provides several more intangible benefits. The various kinds of ICT products available and having relevance to education, such as teleconferencing, email, audio conferencing, television lessons, radio broadcasts, interactive radio counseling, interactive voice response system, audiocassettes and CD ROMs have been used in education for different purpose.

Information and Communication Technology can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration. UNESCO takes a holistic and comprehensive approach to promoting ICT in education. Access, inclusion and quality are among the main challenges they can address. The Organization's Intersectoral platform for ICT in education focuses on these issues through the joint work of three of its sectors: Communication & Information, Education and Science. In this study data were

collected from college going girl students of B.A. second year and B.A. third year (age group 18-24) of Vasant Kanya Mahavidyalaya and Arya Mahila Degree College of Varanasi district. Which is affiliated to Banaras Hindu University. There was multi stage sampling method. Selection of college was purposive sampling method. Total 191 respondents were selected for this study. Data were collected through self structured questionnaire. This study is based on to empower girls through training and assessment about clothing construction technique. The total 237 students were divided into two groups. First group constitute 109 to whom C.D. were provided and remaining second group had 128 students to whom. Manual booklets were provided regarding taking body measurement, cutting of fabrics, drafting and making paper pattern but after intervention only 106 and 85 students turned up for follow up respectively.

**Table 1 –
Distribution of respondent's knowledge regarding taking body measurement during before and after intervention -**

S.n.	Knowledge regarding taking body measurement	Type of training	Pre (N=191)		Follow up 1 st		Follow up 2 nd		Z between		
			No.	%	No.	%	No.	%	Pre & 1 st Follow up	1 st & 2 nd Follow up	Pre & 2 nd Follow up
1.	Sequence of taking measurement	Total	134	70.2	148	77.5	154	80.6	1.63	.75	2.38*
		C.D.	75	70.8	73	68.9	81	76.4	0.30	2.59**	0.94
		Manual	59	69.4	75	88.2	73	85.9	3.01**	0.46	2.98**
		χ^2	0.04		10.14**		2.71				
2.	Ease of tape in round body measurement	Total	30	15.7	70	36.6	119	62.3	4.66** *	5.01***	9.34***
		C.D.	14	13.2	36	34.0	65	61.3	3.56** *	3.99***	7.24***
		Manual	16	18.8	34	40.0	54	63.5	3.04**	2.76**	5.92***
		χ^2	1.12		0.74		0.10				
3.	Method used in taking body measurement for fabric construction	Total	77	40.3	102	53.4	141	73.8	2.56*	4.15***	6.62***
		C.D.	42	39.6	57	53.8	76	71.7	2.07*	2.70**	4.70***
		Manual	35	41.2	45	52.9	65	76.5	1.54	3.21**	4.68***
		χ^2	0.05		0.02		0.56				
4.	Measurement needed for lower body parts	Total	54	28.3	97	50.8	143	74.9	4.50** *	4.57***	9.11***
		C.D.	31	29.2	52	49.1	78	73.5	2.96**	3.67***	6.46***
		Manual	23	27.1	45	52.9	65	76.6	3.44** *	3.21**	6.45***
		χ^2	0.11		0.29		0.21				

5.	Estimation of fabric	Total	62	32.5	101	52.9	123	64.4	4.03** *	2.29*	6.25***
		C.D.	29	27.4	64	60.4	72	67.9	8.84** *	1.15	6.18***
		Manual	33	38.8	27	43.5	51	60.0	0.62	2.15*	2.76***
		χ^2	2.83		5.37		1.29				

Distribution of respondent's knowledge about taking body measurement for stitching during pre and post invention is given on table no - 1 which elucidates that 70.8% & 69.4% of C.D. and manual booklet provided respondents had correct knowledge about sequence of taking measurement before invention but after provided computerized C.D. and manual booklet to the respondents, the knowledge level is significantly decrease among C.D. provided respondents and significantly increase among manual booklet provided students during first follow up but during second follow up it significantly increase among both the groups. It is also observed that only 13.2%, 28.3% and 27.4% of C.D. provided students were aware about how much ease should keep in round body measurement, measurement needed for lower body parts and fabric estimation for fabric construction during pre invention where as it was 18.8%, 27.1% and 38.8% among manual booklet provided respondents respectively. After providing educational materials and training through computerized C.D. and manual booklet method, significant change in their knowledge is seen in both group of respondents during first and second follow up respectively. It is also noticed that the knowledge about the method used for taking measurement in fabric construction at the time of survey is to be observed among 39.6% and 41.2% of computerized C.D. and manual booklet provided respondents and significant increase in knowledge is found among 53.8% and 52.9% of respondent during first follow up and during second follow up it is observed to be 71.7% and 76.5% respectively. There is no significant difference between proportion of C.D. and booklet provided respondents having knowledge about taking body measurement for stitching garment during pre and follow-up first and second respectively with the exception of the knowledge about sequence of taking body measurement and estimation of fabric its construction during first follow up only.

Table No - 2

Distribution of respondent's knowledge regarding cutting of fabric during before and after intervention -

S.n.	Knowledge regarding cutting of fabric	Type of training	Pre (N=191)		Follow up 1 st		Follow up 2 nd		Z between		
			No.	%	No.	%	No.	%	Pre 1 st & Follow up	1 st & 2 nd Follow up	Pre & 2 nd Follow up
1.	Preparation for fabric before cutting	Total	105	55.0	127	66.5	147	77.0	2.31*	2.27*	4.54***
		C.D.	59	55.7	67	63.2	73	68.9	1.12	0.88	1.98*
		Manual	46	54.1	60	70.6	74	87.1	2.22*	2.63**	4.71***
		χ^2	0.05		1.15		8.80**				
2.	Size of dress maker scissor for cutting fabrics	Total	60	31.4	107	56.0	131	68.6	4.85***	2.53*	7.27***
		C.D.	29	27.4	57	48.1	67	63.2	3.92***	1.39	5.24***
		Manual	31	36.5	56	65.9	64	75.3	3.84***	1.35	5.10***
		χ^2	1.82		6.05*		3.20				

3.	Right surface for cutting fabrics	Total	182	95.3	183	95.8	186	97.4	.25	.85	1.09
		C.D.	100	94.3	103	97.2	103	97.2	1.02	0.00	1.02
		Manual	82	96.5	80	94.1	83	97.6	0.72	1.15	0.45
		χ^2	0.48		1.10		0.04				
4.	Marking tools for fabrics before cutting	Total	171	89.5	173	90.6	177	92.7	.34	.74	1.08
		C.D.	93	87.7	96	90.6	99	93.4	0.66	0.76	1.41
		Manual	78	91.8	77	90.6	78	91.8	0.27	0.27	0.00
		χ^2	0.82		0.00		0.19				
5.	Seam allowance taken for stitching	Total	63	33.0	80	41.9	108	56.5	1.80	2.87**	4.63***
		C.D.	35	33.0	41	48.7	58	54.7	0.86	2.34*	3.18**
		Manual	28	32.9	39	45.9	50	58.8	1.73	1.69	3.39***
		χ^2	0.01		1.01		0.32				

The above table elaborates that majority 94.3% and 87.7% of computerized C.D. provided students as well as 96.5% and 91.8% of manual booklet provided students had correct knowledge regarding right surface of cutting fabric and marking tools for fabrics before cutting intervention but after application of computer and manual based training materials, slight increase in their knowledge is observed at the time of first and second follow up respectively. It is also observed that there is no significant difference between proportion of computerized C.D. and manual booklet provided students regarding this matter at the time of pre, first and second follow up respectively.

It is also seen that 55.7% and only 27.4% of C.D. provided students were fully aware regarding preparation for fabrics before cutting and length of dress maker scissor during pre intervention where as it was found to be 54.1% and 36.5% of manual booklet provided students respectively. The knowledge of both the groups significantly increased after application of computerized C.D. and manual booklets which was accounted to be 63.2% and 48.1% among respondents in case of C.D. and 70.6% as well as 55.9% among respondents of manual booklet during first follow up where as during second follow up, it was noted to be 68.9% and 63.2% among C.D. provided students as well as 87.7% and 75.3% among manual booklet provided students respectively. There is no significant difference in knowledge level between the students provided computerized C.D. and manual booklet provided students regarding preparation for fabrics before cutting and length of dress maker scissor.

It is also observed that about one third that is 33.0% and 32.9% of computerized C.D. and manual booklet provided students were knowing about the seam allowance should be leaved while cutting the fabrics at the time of survey period but after giving different type of educational material along with training, knowledge increased among 48.7% and 45.9% at the time of first follow up and again increased among 54.7% and 58.8% at the time of second follow up respectively. There is no significant difference is to be obtained between the specify group of the students regarding this matter at the time of survey as well as at the time of first and second follow up respectively.

Table no –3

Distribution of respondent's knowledge about drafting during before and after intervention -

S.n.	Knowledge about drafting	Type of training	Pre (N=191)		Follow up 1 st		Follow up 2 nd		Z between		
			No.	%	No.	%	No.	%	Pre & 1 st Follow up	1 st & 2 nd Follow up	Pre & 2 nd Follow up
1.	Definition of	Total	86	45.0	108	56.5	128	67.0	2.25*	2.11*	4.33***

	drafting	C.D.	45	42.5	56	52.8	66	62.3	1.51	1.39	2.89**
		Manual	41	48.2	52	61.2	62	72.9	1.70	1.63	3.30***
		χ^2	0.64		1.34		2.43				
2.	Principal of drafting making	Total	59	30.9	93	48.7	131	68.6	3.55***	3.95***	7.37***
		C.D.	35	33.0	55	51.9	73	68.9	2.78**	2.53*	5.22***
		Manual	24	28.2	38	44.7	58	68.2	2.23*	3.09**	5.22***
		χ^2	0.51		0.97		0.01				
3.	Equipments needed for drafting	Total	146	76.4	168	88.0	172	90.1	2.94**	.65	3.56***
		C.D.	82	77.4	92	86.8	95	89.6	1.79	0.64	2.41*
		Manual	64	75.3	76	89.4	77	90.6	2.41*	0.26	2.65**
		χ^2	0.11		0.31		0.05				
4.	Scales for drafting	Total	70	36.6	115	60.2	151	79.1	4.61***	4.01***	8.39***
		C.D.	34	32.1	63	59.4	79	74.5	3.99***	2.34*	6.20***
		Manual	36	42.4	52	61.2	72	84.7	2.46*	3.45***	5.74***
		χ^2	2.15		0.06		2.95				
5.	Knowledge about grainline	Total	56	29.3	90	47.1	129	67.5	3.58***	4.03***	7.47***
		C.D.	33	31.1	144	41.5	74	69.8	1.57	4.15***	5.63***
		Manual	23	27.1	46	54.1	54	64.7	3.59***	1.25	4.78***
		χ^2	0.38		3.01		0.56				

The above table demonstrates that 42.5% and 33.0% of C. D. provided students as well as 48.2% and 28.2% of manual booklet provided students had correct knowledge regarding drafting and its principal respectively before intervention but after provided computer and manual based training materials it increases to among 52.8% and 51.9% of C. D. provided students while it was 61.2% and 44.7% among manual booklet provided students respectively. At the time of first follow up. At the time of second follow up, the knowledge level again increased which is counted to be 62.3% and 68.9% among students of C.D. and 72.9% , 68.2% among manual booklet provided students respectively. Statistically, significant increase in knowledge of both the group is seen between pre, follow up first and second regarding this matter.

It is also observed that majority 77.4% and 75.3% of C.D. and manual booklet provided students were fully aware about required equipment of drafting respectively at the time of survey, after giving educational material to both the group, the knowledge level increased which is counted to be among 86.8% and 89.4% at the time of first follow up as well as among 89.6% & 90.6% at the time of second follow up respectively. There is significant impact of invention between pre & follow up second regarding knowledge for required equipments of the drafting in both the groups. It is noticed that about one third of students that is 32.1% and 31.1% of C.D. provided students were knowing about scales for drafting and grain line where as it was 42.4% and 27.1% among manual booklet provided students at the time of survey but after application of educational materials and training, significant increase is observed among both the groups during first and second follow up respectively. There is no significant difference in knowledge about drafting is pointed out between computerized C.D. and manual booklet provided students during pre, follow up first and follow up second respectively.

Table No - 4

Distribution of respondent's knowledge regarding paper pattern making during before and after intervention -

S.n.	Knowledge regarding paper pattern making	Type of training	Pre (N=191)		Follow up 1 st		Follow up 2 nd		Z between		
			No.	%	No.	%	No.	%	Pre & I st Follow up	I st & II nd Follow up	Pre & II st Follow up
1.	Definition of pattern	Total	133	69.6	154	80.6	159	83.2	2.49*	.67	3.14***
		C.D.	78	73.6	86	81.1	84	79.2	1.31	0.35	0.97
		Manual	55	64.7	68	80.0	75	88.2	2.23*	1.47	3.62***
		χ^2	1.76		0.04		2.74				
2.	Tools used for making paper pattern	Total	101	52.9	129	67.5	138	72.3	2.93**	1.00	3.91***
		C.D.	53	50.0	71	67.0	75	70.8	2.51*	0.59	3.09**
		Manual	48	56.5	58	68.2	63	74.1	1.58	0.85	2.42*
		χ^2	0.79		0.04		0.27				
3.	Parts of paper pattern	Total	142	74.3	149	78.0	176	92.1	.84	3.88***	4.66***
		C.D.	82	77.4	80	75.5	97	91.5	0.32	3.15**	2.84**
		Manual	60	70.6	69	81.2	79	92.9	1.61	2.29*	3.77**
		χ^2	1.13								
4.	Guide symbol of paper pattern	Total	109	57.1	139	72.8	159	83.2	3.22**	2.47*	5.59***
		C.D.	58	54.7	73	68.9	89	82.4	1.34	2.23*	3.54***
		Manual	51	60.0	66	77.6	70	82.4	2.48*	0.77	3.22**
		χ^2	0.54		1.84		0.09				
5.	Benefit to make paper pattern	Total	128	67.0	140	73.3	158	82.7	1.34	2.23*	3.54***
		C.D.	68	64.2	72	67.9	87	82.1	0.58	2.38*	2.94**
		Manual	60	70.6	68	80.0	71	83.5	1.42	0.60	2.01*
		χ^2	0.88		3.51		0.07				

The distribution of respondent's knowledge regarding paper pattern making during before and after invention is presented in table 4- It reveals that majority 73.6% , 77.4% and 64.2% of computerized C.D. provided respondents as well as 64.7% & 70.6% each of manual booklet provided respondents were knowing regarding paper pattern definition, parts of paper pattern and benefit to make paper pattern at the time of pre invention while after application of computerized C.D. and manual booklet, the knowledge increased but this increase is not found to be significant at the time of first follow up except among manual booklet provided students about paper pattern definition but after giving training significant increase in their knowledge was seen at the time of second follow up regarding these matters.

The analysis also illustrates that 50.0% and 54.7% of computerized C.D. provided students as well as 56.5% and 60.0% of manual booklet provided student had correct knowledge about different tool needed for paper pattern making and guide symbol of paper pattern respectively at the time of survey but after application of related educational materials and training programme, the knowledge significantly increased which are counted to be among 70.8% and 84.0% of computerized C.D. provided respondents and 74.1% & 82.4% of manual booklet provided respondents respectively at the time of second follow up. There is no significant difference between specified two group of respondent's knowledge regarding different dimension of paper pattern at the time of pre and follow up first as well as follow up second respectively.

Conclusion:

The result clearly mark out that significantly similar type of change of knowledge is observed after providing computerized C.D. manual booklet educational training. No significant difference is found between computerized C.D. and manual booklet provided students during pre intervention as well as during follow up first and second respectively in the present study area. Donkor (2010) observed similar trends as found in the present study.

The result throws light upon the fact that no significant increase in knowledge regarding right surface for cutting fabric and marking tools for fabric before cutting among both the group of students after providing educational material and training but knowledge regarding preparation for fabrics before cutting, length of dress maker scissor and measurement of seam allowance taken for stitching is observed to be significantly in increasing order at the time of first and second follow up respectively. There is no significant difference in knowledge level regarding cutting of fabrics between computerized C.D. and manual booklet provided students at the time of pre, follow up first and second respectively in the present study.

The result clearly shows that there is significant impact of computerized C.D. and manual booklet along with training on knowledge about drafting. It is also observed that there is similar type of increase in knowledge of both the group of students noticed regarding different dimension of drafting because no significant difference in their knowledge is seen during first and second follow up in the selected students. It may be concluded that significant impact of educational material and training programme regarding knowledge about paper pattern making is observed which is significantly similar in both the group of students. There is no significant difference in knowledge level between both the group of students regarding different dimension of paper pattern making either at the time of survey or at the time of first and second follow up respectively in the present study.

It was also noted that no significant difference in knowledge level between computerized C.D. and manual booklet provided students during pre intervention as well as first and second follow up regarding , taking body measurement, cutting, drafting and paper patter making respectively. It can say in other words both type of educational materials significantly have similar efficiency to provided knowledge regarding these matter to the students.

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