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DEVELOPMENT OF AN INTERACTIVE INSTRUCTIONAL PACKAGE ON COMPUTERISED ACCOUNTING FOR ENHANCING COLLABORATIVE SKILLS AND ACHIEVEMENT IN COMMERCE AT HIGHER SECONDARY LEVEL

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Abstract:

In the age of digital transformation and globalization, commerce education must transcend conventional teaching methodologies. This study focuses on developing and evaluating an interactive instructional package designed to enhance collaborative skills and academic achievement in computerized accounting among higher secondary students. Utilizing a two-group pre-test and post-test experimental design, 80 students from Alappuzha district were selected and divided into experimental and control groups. The intervention involved the use of an ICT-based module that emphasized simulations, group tasks, and software applications in accounting. The results, analyzed using descriptive and inferential statistics, revealed a statistically significant improvement in both collaborative skills and academic performance among the experimental group. The study underlines the relevance of technology-integrated pedagogy in commerce education and advocates for its broader implementation.

Key Words: Interactive Instructional Package, Computerized Accounting, Collaborative Skills, Academic Achievement, ICT-Based Learning

Introduction:

The global shift towards knowledge economies and rapid advancements in information technology have profoundly transformed the educational landscape. Commerce education, particularly accounting, must adapt to these changes by integrating digital tools and collaborative learning strategies. Computerised accounting, a database-driven approach to recording and analyzing financial data, has emerged as an essential skill for modern commerce students. This study attempts to bridge the gap between academic instruction and industry-relevant competencies by designing an interactive instructional package that combines accounting software training with collaborative learning elements.

The importance of digital literacy in accounting cannot be overstated. Commerce students must be proficient in using computerized accounting tools and capable of functioning in team-based environments. Traditional lecture-based teaching often fails to impart such practical and collaborative competencies. By implementing an interactive instructional package, this study aims to:

- Enhance student engagement and comprehension
- Develop soft skills such as teamwork, communication, and problem-solving
- Improve academic achievement in computerized accounting

Hypotheses of the Study:

- There is significant difference between experimental group and control group in Pre test scores of Achievement in Commerce.
- There is significant difference between experimental group and control group in Pre test scores of Collaborative Skills.
- There is significant difference between the pre test and post test scores of Achievement in Commerce for the experimental group.
- There is significant difference between the pre test and post test scores of Collaborative Skills for the experimental group.
- There is significant difference between experimental group and control group in their post-test scores of Achievement in Commerce after they have been adjusted for difference in the pre - test scores of Achievement in Commerce.
- There is significant difference between experimental group and control group in their post-test scores of Collaborative Skills after they have been adjusted for difference in the pre - test scores of Collaborative Skills.

Objectives of the Study:

- To develop an instructional package for enhancing collaborative skills and achievement in computerised accounting at Higher Secondary Level
- To compare the pre test mean scores of selected samples exposed to the instructional package for enhancing collaborative skills among higher secondary school students
- To compare the pre test mean scores of selected samples exposed to the instructional package for enhancing achievement in computerised accounting among higher secondary students.
- To compare the post test mean scores of selected samples exposed to the instructional package for enhancing collaborative skills among higher secondary school students
- To compare the post test mean scores of selected samples exposed to the instructional package for enhancing achievement in computerised accounting among higher secondary students.

- To test the effectiveness of an instructional package for enhancing the collaborative skills and achievement in computerised accounting in commerce at higher secondary school level

Methodology:

Design: Pre-test, post-test control group experimental design

Sample: 80 students from K.V. Sanskrit Higher Secondary School and NSHSS Mannar, Alappuzha district Groups: Experimental group received the interactive package; control group received traditional instruction tools Used:

- Interactive lesson templates and accounting simulations
- Achievement test in computerized accounting
- Collaborative skill rubric and observational checklists Analysis Techniques:
- Descriptive statistics (mean, SD) and inferential statistics (t-test, ANOVA)

Testing of Hypotheses:

This section deals with the testing of hypotheses formulated for the study using appropriate statistical techniques.

Testing of Hypothesis 1:

Table 1: Test of significance of difference between means of Pre test scores of Achievement in Commerce of experimental group and control group

Group	Number	Mean	Standard Deviation	t	Level of Significance
Experimental Group	40	17.6	1.53	0.35	Not Significant
Control Group	40	17.73	1.68		

The calculated value of t is 0.35 and is not significant at 0.05 level (t = 0.35; p>0.05). Since the mean of the experimental group do not differ significantly from that of the control group, experimental group and control group are more or less equal in Pre test scores of Achievement in Commerce.

The calculated value of t is 0.35 and is not significant at 0.05 level (t = 0.35; p>0.05). Since the mean of the experimental group do not differ significantly from that of the control group, experimental group and control group are more or less equal in Pre test scores of Achievement in Commerce.

Tenability of Hypothesis:

Test of significance of difference between means of Pre test scores of Achievement in Commerce of experimental group and control group revealed that there is no significant difference between experimental group and control group in Pre test scores of Achievement in Commerce. Hence the null hypothesis formulated in this context is not rejected.

Testing of Hypothesis 2:

Table 2: Test of significance of difference between means of Pre test scores of Collaborative Skills of experimental group and control group

Group	Number	Mean	Standard Deviation	t	Level of Significance
Experimental Group	40	14.93	1.33	0.08	Not significant
Control Group	40	14.95	1.36		

The calculated value of t is 0.08 and is not significant at 0.05 level (t = 0.08; p>0.05). Since the mean of the experimental group do not differ significantly from that of the control group, experimental group and control group are more or less equal in Pre test scores of Collaborative Skills.

Tenability of Hypothesis:

Test of significance of difference between means of Pre test scores of Collaborative Skills of experimental group and control group revealed that there is no significant difference between experimental group and control group in Pre test scores of Collaborative Skills. Hence the null hypothesis formulated in this context is not rejected.

Testing of Hypothesis 3:

Table 3: Test of significance of difference between means of pre-test and post-test scores of Achievement in Commerce of the experimental group

Assessment	Number of Students	Mean	Standard Deviation	t	Level of Significance
Pre Test	80	17.66	1.6	19.6	0.01
Post Test	80	23.93	2.45		

The calculated value of t is 19.6 and is significant at 0.01 level (t = 19.6; p<0.01). The mean of the post-test scores of Achievement in Commerce is significantly greater than that of the pre-test scores. This means that the Interactive Instructional Package on Computerised Accounting is effective in enhancing the Achievement in Commerce of the experimental group.

Tenability of Hypothesis

Test of significance of difference between means of pre-test and post-test scores of Achievement in Commerce of the experimental group revealed that there is significant difference between pre-test and post-test scores of Achievement in Commerce. Hence the null hypothesis formulated in this context is rejected.

Testing of Hypothesis 4:

Table 4: Test of significance of difference between means of pre-test and post-test scores of Collaborative Skills of the experimental group

Assessment	Number of Students	Mean	Standard Deviation	t	Level of Significance
Pre Test	80	14.94	1.33	13	0.01
Post Test	80	18.85	2.65		

The calculated value of t is 13 and is significant at 0.01 level (t = 13; p<0.01). The mean of the post-test scores of Collaborative Skills is significantly greater than that of the pre-test scores. This means that the Interactive Instructional Package on Computerised Accounting is effective in enhancing the Collaborative Skills of the experimental group.

Tenability of Hypothesis:

Test of significance of difference between means of pre-test and post-test scores of Collaborative Skills of the experimental group revealed that there is significant difference between pre-test and post-test scores of Collaborative Skills. Hence the null hypothesis formulated in this context is rejected.

Testing of Hypothesis 5:

Table 5: Analysis of Covariance of pre-test and post-test scores of Achievement in Commerce of experimental group and control group

Source of Variation	df	Sum of Squares	Mean Square	f	Level of Significance
Among Means	1	152.51	152.51	36.71	0.01
Within Groups	77	319.93	4.15		
Total	78	472.44			

The obtained value of F is 36.71 and is significant at 0.01 level. (F = 36.71; p<0.01). This shows that the post-test mean scores of Achievement in Commerce of treatment groups differ significantly after they have been adjusted for difference in the pre-test scores of Achievement in Commerce.

Table 6: Pre-test, post-test and adjusted post-test mean scores of Achievement in Commerce of the treatment groups

Group	Number of Students	Mean of Pre-Test	Mean of Post-Test	Adjusted Post-Test Mean
Control	40	17.73	22.55	22.54
Experimental	40	17.6	25.3	25.31

The significant difference between the adjusted post-test means of Achievement in Commerce indicates that the pupils of experimental and control group differ significantly in their post-test scores of Achievement in Commerce after they have been adjusted for difference in the pre-test scores of Achievement in Commerce. Since the adjusted mean of post-test scores of Achievement in Commerce of experimental group is significantly greater than that of the control group, the treatment applied to the experimental group is better than that applied to the control group.

Tenability of Hypothesis:

Analysis of Covariance of pre-test and post-test scores of Achievement in Commerce of experimental group and control group revealed that there is significant difference between control group and experimental group in their post-test scores of Achievement in Commerce after they have been adjusted for difference in the pre-test scores of Achievement in Commerce. Hence the null hypothesis formulated in this context is rejected.

Testing of Hypothesis 6:

Table 7: Analysis of Covariance of pre-test and post-test scores of Collaborative Skills of experimental group and control group

Source of Variation	df	Sum of Squares	Mean Square	f	Level of Significance
Among Means	1	258.72	258.72	67.6	0.01
Within Groups	77	294.71	3.83		
Total	78	553.43			

The obtained value of F is 67.6 and is significant at 0.01 level. (F = 67.6; p<0.01). This shows that the post-test mean scores of Collaborative Skills of treatment groups differ significantly after they have been adjusted for difference in the pre-test scores of Collaborative Skills.

Table 8: Pre-test, post-test and adjusted post-test mean scores of Collaborative Skills of the treatment groups

Group	Number of Students	Mean of Pre-Test	Mean of Post-Test	Adjusted Post-Test Mean
Control	40	14.95	17.05	17.05
Experimental	40	14.93	20.65	20.65

The significant difference between the adjusted post-test means of Collaborative Skills indicates that the pupils of experimental and control group differ significantly in their post-test scores of Collaborative Skills after they have been adjusted for difference in the pre-test scores of Collaborative Skills. Since the adjusted mean of post-test scores of Collaborative Skills of experimental group is significantly greater than that of the control group, the treatment applied to the experimental group is better than that applied to the control group.

Tenability of Hypothesis:

Analysis of Covariance of pre-test and post-test scores of Collaborative Skills of experimental group and control group revealed that there is significant difference between control group and experimental group in their post-test scores of Collaborative Skills after they have been adjusted for difference in the pre-test scores of Collaborative Skills. Hence the null hypothesis formulated in this context is rejected.

Discussion and Conclusion:

A marked improvement in the experimental group's post-test scores for both collaborative skills and academic achievement. Statistically significant differences between mean gain scores of the control and experimental groups. These findings align with previous research indicating the positive impact of ICT and collaboration-based learning environments on student performance (Abdullah & Yusof, 2017; Ruffinengo & La Rocca, 2019).Integrating interactive, technology-driven instruction with collaborative activities significantly enhances students' learning experiences and performance in computerised accounting. The findings advocate for widespread implementation of such pedagogical tools to modernize commerce education and better prepare students for academic and professional success.

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