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CHAPTER VI

SUMMARY OF MAJOR FINDINGS, IMPLICATIONS, RECOMMENDATIONS AND CONCLUSION

In this chapter the investigator presents the summary, major findings, suggestions and conclusions of the study. This chapter gives the Summary of the previous chapters, Description of Methodology in brief, Major findings, Tenability of hypotheses, Educational implications, Recommendations and Suggestions for further studies.

6.1 The study in Retrospect

The present study has been designed to investigate the Effectiveness of Electronic Portfolio on developing writing skill among English Teacher Trainees. The details of the study are given below.

6.1.1 Identification of the research problem:

The researcher being a teacher educator in English for more than six years came across the written assignments, unit test, model and university exam papers of English teacher trainees and realized the fact that the performance of the teacher trainees in English were not up to the expected level. They were able to write the textual questions without many mistakes but they found it difficult to write something of their own like discourse writing. (e.g. – letter writing, report writing etc.) It was a pathetic condition that even after completing graduation and post-graduation, the English teacher trainees who were going to mould the future generation found it difficult to write independently and without mistakes. The researcher sensitized the need for a change of the above said notion to create better atmosphere in teacher education.

6.1.2 Need of the study

The limited contact time and the large class size often undermine the effectiveness of language learning and teaching. To enhance the development of student language skills, language educators have to create a learning environment that can foster autonomous learning of learners, in which learners can learn outside the
classroom intensively and extensively. To make writing a more substantial, meaningful and successful experiences for students, English teacher trainees are the right people to be experimented. They should get a platform where they can write their assignments, share with others and get immediate feedback. An e platform will help the B Ed trainees to post and share their assignments in the form of a written composition. They in turn nurture students in school towards development of the writing skills. So the researcher sensitized the need of implementing E Portfolio in the teacher training institution to develop the writing skills of teacher trainees.

6.1.3 Significance of the study

This study contributes to an international body of knowledge concerning the design and implementation of E Portfolios in higher education. Three key aspects are suggested in relation to the significance of this study.

First, this study provides a basis for understanding the need for changes to curricula and the active collaboration of academic and support staff and administrators. Without this, an e portfolio could be reduced to an electronic student record keeper, with little reflection and acknowledgement of purpose. Second, this study offers insights into the student engagement with an e portfolio. Student engagement draws together insights about activities that tend to promote high quality learning. Finally, the findings can provide a lens through which more focussed interventions can be developed in order to increase the level of engagement. Electronic Portfolio can be undertaken in any teacher training colleges to enhance the writing skill of teacher trainees.

6.1.4 Collection of reviews on related research studies

The investigator took the first six months of the research for collecting reviews related to the study. The researcher reviewed the studies related to Electronic Portfolio implementation in the educational settings and its challenges, development of writing competency through various models, and also the role of reflective practice in the educational scenario. From the reviews the researcher understood that continuous monitoring was essential to enhance the writing competencies of teacher trainees and the practice of reflection over one’s own writing artefacts acts as a reflective procedure. Such a practice was planned through electronic format and executed in the selected B Ed College.
6.1.5 Title of the Study

The study is titled as “Effectiveness of Electronic Portfolio on developing Writing Skill among English Teacher Trainees”.

6.1.6 Definition of key-terms

The keywords in this study are defined as follows.

**Effectiveness** – Effectiveness is the capability of producing the result that is wanted or intended; producing a successful result. (Oxford Advanced Learners’ Dictionary)

**Portfolio** – Rick Stiggins (1994) defines a portfolio as a collection of student work that demonstrates achievement or improvement.

**Electronic portfolio** – Barrett (2000) describes electronic portfolios as (those that make) use of electronic technologies that allow the portfolio developer to collect and organize artifacts in many formats (audio, video, graphics, and text). A standard based electronic portfolio uses hypertext links to organize the material to connect artifacts to appropriate goals or standards. An electronic portfolio is not a haphazard collection of artifacts (i.e. a digital scrapbook or multimedia presentation) but rather a reflective tool that demonstrates growth over time’.

**Writing skill** – In Word reference (2010), Writing is one of the ways to give and idea or message which is form in writing on a piece of paper or the other area. It is an act of making marks on certain surface. Specifically, writing is one kind of expression in language which is created by particular set of symbol, having conventional values for representing the wordings of particular language which is drawn up visually.

**Teacher trainee** – People who are training to become teachers which involves teaching classes of students (Oxford Advanced Learners’ Dictionary)

6.1.7 Operational definitions

**Effectiveness** – Here effectiveness is to find out the impact of electronic portfolios on enhancing writing skill among English teacher trainees.

**Electronic portfolio** – Electronic portfolio is an e platform where English teacher trainees document their work along with self, peer and teacher educator’s reflection.
Writing skill - Writing skill is a specific ability or skill that English teacher trainees show in progressive tasks. Here the teacher trainees need to accomplish the ability to express the content appropriately (content), ability to express a thought in an organized manner (organization), ability to express to use the mechanics of language-spelling, grammar and punctuation (Mechanics of writing) and ability to express the matter relevant to question asked in progressive tasks (focus).

English teacher trainees- English teacher trainees are the undergraduate students in teacher education institution who are specializing in English Methodology and Pedagogy in NSS Training College, Pandalam and St Mary’s Women’s College for Teacher Education, Thiruvalla.

6.1.8 Objectives of the study

- To identify the teacher trainees’ writing skill in English at the entry level
- To design and operate e portfolio on developing writing skill among English teacher trainees
- To find out the effectiveness of the constructed e portfolio on developing writing skills of teacher trainees in English
- To find out the development of writing skill among English teacher trainees at exit level

6.1.9 Hypotheses of the study

- There exists a significant difference between the entry behaviour and exit behaviour of both the experimental group and control group teacher trainees in writing English.
- There will be an impact of electronic portfolio implementation among experimental group on writing English.
- There will be a significant difference between the post test scores of experimental group and control group teacher trainees in writing English.
- There exists a significant difference between experimental group and control group teacher trainees in their writing skill on the basis of language components (dialogue, invitation, letter, notice, paragraph, report, précis and diary writing) assessed at exit level.
6.1.10 Selection of the sample

There are 17 aided and 4 government B.Ed training colleges in Kerala. The researcher employed convenient sampling technique for the present study. The experimental college was selected on the basis of availability of internet facilities. The study focused on developing the writing competencies of the English teacher trainees. Hence the investigator selected the two B Ed colleges where English methodology was treated as a programme and the sample comprised of students who undertook English as their area of specialization. The two Teacher Education colleges selected by the investigator were

NSS Training College, Pandalam
St Mary’s Women’s College for Teacher Education, Thiruvalla.

Their entry level writing competency was assessed through the scores of their test papers conducted in the first semester in English and homogeneity was established.

6.1.11 Limitations

In the rural areas, the internet facilities were rarely accessible. Among five teacher education colleges in Pathanamthitta district, four colleges had internet facility. But permission was given only by three colleges. Out of the three colleges, the researcher selected NSS Training College, Pandalam. Therefore it was restricted to have the implementation of the designed treatment in NSS Training College, Pandalam, Kerala.

6.1.12 Delimitations

The researcher, being a Keralite, limited her research to the training colleges in Kerala. The study was limited to only two B Ed training institutions where English Methodology was treated as optional. The researcher limited her study mainly to develop the writing skill in-platform, sharing and reflecting their views and experiences with the researcher and the peer group.

6.1.13 Research Design

Experimental method was used in the study for testing the effectiveness of electronic portfolio on the development of writing skill among English teacher trainees. The experimental design used was the ‘pre-test post-test control group design’.
Variables of the study

The present investigation is an attempt to develop writing skills among English teacher trainees using electronic portfolio documentation. The variables are:

**Independent variable**: Electronic portfolio (Documentation of discourse writing and reflecting on electronic platform)

**Dependent variable**: Writing skill in English

**Duration of the programme**

One Semester of teacher education at B.Ed. level i.e. about one hundred and twenty hours.

**Size of the sample**

The size of the sample in the present study was restricted to seventy teacher trainees in English (35 experimental and 35 control group)

**Tool Developed**

**English Teacher Trainees’ Assessment Tool for Writing Skills (ETTATWS)**

**6.1.14 Procedure**

The procedure adopted for the study is explained briefly.

The intervention strategy was designed using curriculum components of English teacher trainees. The different language discourses should be mastered by the teacher trainees in the second semester, especially during their internship. So practice was given in the first semester itself i.e. from October 2013 to March 2014. The control group was taught by the investigator herself through conventional method.

The experimental group was given electronic portfolio treatment. The researcher developed an e platform with the help of some software professionals. The researcher manipulated portfolio writing in the form of progressive tasks as a medium for learning activities. The whole programme was framed in three stages. The teacher educator as well as the teacher trainees was given different IDs and password through which they could log in. The teacher educator could assign discourses and upload the standards and rubrics in MS WORD through which teacher trainees were assessed. They could also show the expiry date of the assignment. The teacher trainee could log in using the ID and password given to them. They could do the exercise on the provided space. Specific space for peer reflection was another feature of e portfolio.

Each teacher trainee could see the works of the rest of the students and they could
make their comment on the peers’ work. So a single teacher trainee could get the reflective comments of 34 peers which were open to all. The teacher educator’s authoritative reflection would be there on each trainee’s work which was always kept confidential. A trainee would write a single discourse 3 times in the form of progressive tasks. So altogether they had submitted 24 assignments in 3 progressive tasks.

After processing all the three progressive tasks, the teacher trainees were asked to make a choice of good, better and best among all their written performance. These progressive tasks including the reflection of teacher educator, peers and self served as the documents for portfolio. Thus portfolio in the first stage comprised of the following artefacts

1. Progressive task Ia
2. Peer reflective writing Ia
3. Teacher reflective writing Ia
4. Self-reflective writing Ia

Similarly portfolio was documented in the second and third stages. After completion of all the written performance, the researcher conducted the post-test so as to measure the effectiveness of strategy after being exposed to the treatment.

The data thus collected were analyzed using appropriate statistical techniques like Arithmetic mean, Median, Mode, Standard deviation, Skewness, Kurtosis-test, critical ratio, and ANCOVA. The results obtained were discussed appropriately leading to the findings of the study.

### 6.2 Major findings of the study

The conclusions based on the statistical analysis of the test scores are classified under following heads.

1. **To find out the effectiveness of constructed e portfolio on development of writing skills of teacher trainees in English (Overall performance)**

   a) **To compare the post test scores of English teacher trainees in control group and experimental group on writing skill**
The mean score of the experimental group (72.14) is greater than that of the control group (41). The critical ratio obtained is 11.95, which is highly significant even at 0.01 level. Since the mean of experimental group is greater than that of the control group, it is inferred that the performance of experimental group is better than the control group.

b) **To compare the pre-test and post test scores of English teacher trainees in control group and experimental group on writing skill**

The posttest mean scores of the Control group (41.00) is greater than that of the pretest mean score (36.31). The critical ratio obtained is 5.90, which is highly significant even at 0.01 level. Since the mean of pretest and posttest scores of control group significantly differs it can be inferred that the conventional method of teaching has got its own significance.

The posttest mean scores of the experimental group (72.14) is greater than that of the pretest mean score (37.49). The critical ratio obtained is 35.98, which is highly significant even at 0.01 level. Since the mean of pretest and posttest scores of experimental group significantly differs it is inferred that after the intervention students have performed well.

c) **To compare the gain scores of the English teacher trainees in control group and experimental group on writing skill**

The mean gain score of the experimental group (35.05) is greater than that of the control group (4.68). The obtained critical ratio is 24.97 which is highly significant even at 0.01 level. Since the mean of experimental group is greater than that of the control group, it is inferred that the performance of experimental group is better than that of the control group.

d) **To compare the post test and delayed post test scores of the English teacher trainees in experimental group on writing skill**

The critical ratio obtained is 1.75, which is not significant even at 0.01 level. So it can be inferred that there is no significant mean difference between post test scores and delayed post test scores of teacher trainees of English. So it is evident that
teacher trainees who underwent electronic portfolio treatment were able to retain what they learned.

e) **To compare the adjusted mean scores of the English teacher trainees in control group and experimental group on writing skill**

The analysis of variance of pre-test (x) and post-test (y) scores of students’ achievement in writing skill of English of the Experimental and Control group showed that there was significant difference between the two groups (142.91; p<0.01). This testifies the effectiveness of electronic portfolio in developing writing skill.

The analysis of co-variance of pre-test(x) and post-test(y) scores of students’ achievement in writing skill of English of the Experimental and Control group showed that there was significant difference between the two groups (F<sub>y,x</sub> = 810.11; p < 0.01). This testifies the effectiveness of electronic portfolio in developing writing skill.

The adjusted mean of post test scores were tested for significance for df = 1/67. The t value obtained for adjusted mean is 28.48, which is greater than the table value 2.66 which implies that experimental group and control group differ significantly. The results of the analysis made in this section clearly indicate that the electronic portfolio is an effective method in developing writing skill among English teacher trainees.

2 **To find out the effectiveness of constructed e portfolio on development of writing skills of teacher trainees in English of control and experimental group on the basis of components such as Dialogue, Invitation, Letter, Notice, Paragraph, Report, Précis and Diary writing**

a) **To compare the post test scores of the English teacher trainees in control group and experimental group on writing skill on the basis of components such as Dialogue, Invitation, Letter, Notice, Paragraph, Report, Précis and Diary writing**

The critical ratio obtained t value are 4.82, 8.81, 8.77, 6.77, 9.80, 13.81, 10.04 and 12.45 for Dialogue, Invitation, Letter, Notice, Paragraph, Report, Précis and Diary writing respectively, all the values are greater than the table value 1.96 at 0.05 level of
significance. This means there is significant difference between the post test scores of control and experimental group. Since the mean of experimental group is greater than that of the control group, it is inferred that after the experiment, the performance of experimental group is better than the control group in terms of components.

\[ b) \quad \text{To compare the pre-test and post test scores of English teacher trainees in control group and experimental group on writing skill such as Dialogue, Invitation, Letter, Notice, Paragraph, Report, Précis and Diary writing} \]

The critical ratio obtained t value for dialogue, invitation, letter, notice, paragraph, report, précis, and diary in experimental and control group are greater than the table value 1.96 at 0.05 level of significance. This means there is significant difference in the pretest and post test scores of control and experimental group; it is inferred that after the experiment, the performance of both the groups is better than those before it in terms of components.

\[ c) \quad \text{To compare the gain scores of the English teacher trainees in control group and experimental group on writing skill such as Dialogue, Invitation, Letter, Notice, Paragraph, Report, Précis and Diary writing} \]

The obtained critical ratio for each of the discourse is highly significant at 0.01 level. Since all the mean gain scores of experimental group are greater than those of the control group, it is inferred that the performance of experimental group is better than the control group in terms of components.

\[ d) \quad \text{To compare the adjusted mean scores of the English teacher trainees in control group and experimental group on writing skill such as Dialogue, Invitation, Letter, Notice, Paragraph, Report, Précis and Diary writing} \]

\[ (a) \quad \text{Dialogue} \]

The analysis of variance of pre-test(x) and post-test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control groups showed that there was significant difference between the two groups on the basis of the discourse; dialogue(23.19; p<0.01). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; dialogue writing.
The analysis of co variance of pre- test(x) and post- test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control groups showed that there was significant difference between the two groups on the basis of the discourse; dialogue ($F_{y,x} = 41.45; p < 0.01$). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; dialogue writing.

The adjusted mean of post-test scores were tested for significance for $df = 1/67$. The $t$ value obtained for adjusted mean is 6.46, which is greater than the table value 2.66 which implies that experimental group and control group differ significantly on the basis of the discourse; dialogue. The results of the analysis made in this section clearly indicate that electronic portfolio is an effective method for developing writing skill among English teacher trainees under the discourse; dialogue writing.

(b) Invitation

The analysis of variance of pre- test(x) and post- test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control group showed that there was significant difference between the two groups on the basis of the discourse; invitation ($F_{y,x} = 77.75; p < 0.01$). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; invitation writing.

The analysis of co variance of pre- test(x) and post- test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control groups showed that there was significant difference between the two groups on the basis of the discourse; invitation ($F_{y,x} = 127.67; p < 0.01$). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; invitation writing.

The adjusted mean of post-test scores were tested for significance for $df = 1/67$. The $t$ value obtained for adjusted mean is 11.30, which is greater than the table value 2.66 which implies that experimental group and control group differ significantly on the basis of the discourse; invitation. The results of the analysis made in this section clearly indicate that electronic portfolio is an effective method for developing writing skill among English teacher trainees under the discourse; invitation writing.
(c) **Letter**

The analysis of variance of pre-test(x) and post-test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control groups showed that there was significant difference between the two groups on the basis of the discourse; letter (77.02; p<0.01). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; letter writing.

The analysis of covariance of pre-test(x) and post-test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control groups showed that there was significant difference between the two groups on the basis of the discourse; letter \( F_{y,x} = 183.18; p < 0.01 \). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; letter writing.

The adjusted mean of post-test scores were tested for significance for df = 1/67. The t value obtained for adjusted mean is 13.69, which is greater than the table value 2.66 which implies that experimental group and control group differ significantly on the basis of the discourse; letter. The results of the analysis made in this section clearly indicate that electronic portfolio is an effective method for developing writing skill among English teacher trainees under the discourse; letter writing.

(d) **Notice**

The analysis of variance of pre-test(x) and post-test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control groups showed that there was significant difference between the two groups on the basis of the discourse; notice (45.93; p<0.01). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; notice writing.

The analysis of covariance of pre-test(x) and post-test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control groups showed that there was significant difference between the two groups on the basis of the discourse; notice \( F_{y,x} = 66.25; p < 0.01 \). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; notice writing.
The adjusted mean of post-test scores were tested for significance for \( df = 1/67 \). The t value obtained for adjusted mean is 8.17, which is greater than the table value 2.66 which implies that experimental group and control group differ significantly on the basis of the discourse; notice. The results of the analysis made in this section clearly indicate that electronic portfolio is an effective method for developing writing skill among English teacher trainees under the discourse; notice writing.

(e) Paragraph

The analysis of variance of pre-test(x) and post-test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control group showed that there was significant difference between the two groups on the basis of the discourse; paragraph \((69.13; p<0.01)\). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; paragraph writing.

The analysis of covariance of pre-test(x) and post-test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control groups showed that there was significant difference between the two groups on the basis of the discourse; paragraph \((F_{y,x} = 168.22; p < 0.01)\). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; paragraph writing.

The adjusted mean of post-test scores were tested for significance for \( df = 1/67 \). The t value obtained for adjusted mean is 13.00, which is greater than the table value 2.66 which implies that experimental group and control group differ significantly on the basis of the discourse; paragraph. The results of the analysis made in this section clearly indicate that electronic portfolio is an effective method for developing writing skill among English teacher trainees under the discourse; paragraph writing.

(f) Report

The analysis of variance of pre-test(x) and post-test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control group showed that there was significant difference between the two groups on the basis of the discourse; report \((173.76; p<0.01)\). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; report writing.
The analysis of co variance of pre- test(x) and post- test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control groups showed that there was significant difference between the two groups on the basis of the discourse; report \((F_{y,x} = 376.20; p < 0.01)\). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; report writing.

The adjusted mean of post-test scores were tested for significance for \(df = 1/67\). The t value obtained for adjusted mean is 19.42, which is greater than the table value 2.66 which implies that experimental group and control group differ significantly on the basis of the discourse; report. The results of the analysis made in this section clearly indicate that electronic portfolio is an effective method for developing writing skill among English teacher trainees under the discourse; report writing.

### (g) Précis

The analysis of variance of pre- test(x) and post- test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control group showed that there was significant difference between the two groups on the basis of the discourse; précis \((100.96; p<0.01)\). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; précis writing.

The analysis of co variance of pre- test(x) and post- test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control groups showed that there was significant difference between the two groups on the basis of the discourse; précis \((F_{y,x} = 160.93; p < 0.01)\). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; précis writing.

The adjusted mean of post-test scores were tested for significance for \(df = 1/67\). The t value obtained for adjusted mean is 12.69, which is greater than the table value 2.66 which implies that experimental group and control group differ significantly on the basis of the discourse; précis. The results of the analysis made in this section clearly indicate that electronic portfolio is an effective method for developing writing skill among English teacher trainees under the discourse; précis writing.
(h) Diary

The analysis of variance of pre-test(x) and post-test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control group showed that there was significant difference between the two groups on the basis of the discourse; diary(155.23; p<0.01). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; diary writing.

The analysis of covariance of pre-test(x) and post-test(y) scores of English teacher trainees’ achievement in writing skill of the Experimental and Control groups showed that there was significant difference between the two groups on the basis of the discourse; diary($F_{y,x} = 322.38; p < 0.01$). This testifies the effectiveness of electronic portfolio in developing writing skill under the discourse; diary writing.

The adjusted mean of post-test scores were tested for significance for $df = 1/67$. The t value obtained for adjusted mean is 17.96, which is greater than the table value 2.66 which implies that experimental group and control group differ significantly on the basis of the discourse; diary. The results of the analysis made in this section clearly indicate that electronic portfolio is an effective method for developing writing skill among English teacher trainees under the discourse; diary writing.

6.3 Tenability of hypotheses

- **There exists a significant difference between the entry behaviour and exit behaviour of both the experimental group and control group teacher trainees in writing English.**

  The obtained critical ratio for control group and experimental group is 5.90 and 35.98 respectively which is highly significant even at 0.01 level. So it can be inferred that there exists a significant difference between the entry behaviour and exit behaviour of both the experimental group and control group teacher trainees in writing English. **Hence the stated hypothesis is accepted.**

- **There will be an impact of electronic portfolio implementation among experimental group on writing English.**

  The mean gain score of the experimental group (35.05) is greater than that of the control group (4.68). The obtained critical ratio is 24.97 which is highly
significant even at 0.01 level. Since the mean of experimental group is greater than that of the control group it is inferred that the overall performance of experimental group is better than that of the control group.

The obtained critical ratio for each of the discourse is highly significant at 0.01 level. Since all the mean gain scores of experimental group are greater than those of the control group, it is inferred that the performance of experimental group is better than the control group in terms of components. **So the stated hypothesis is accepted.**

- **There will be a significant difference between the post test scores of experimental group and control group teacher trainees in writing English.**

  The critical ratio obtained is 11.95, which is highly significant at 0.01 level. This shows that there is a significant difference between the means of the post-test scores of experimental group and control group teacher trainees in English. **Therefore the stated hypothesis is accepted.**

- **There exists a significant difference between experimental group and control group teacher trainees in their writing skill on the basis of language components (dialogue, invitation, letter, notice, paragraph, report, précis and diary writing) assessed at exit level.**

  The critical ratio obtained for the components of writing skill are greater than the table value 1.96 at 0.05 level of significance. Since the means of experimental group are greater than those of the control group, it is inferred that after the experiment, the performance of experimental group is better than the control group in terms of components. This means that there exists a significant difference between experimental group and control group teacher trainees in their writing skill on the basis of language components (dialogue, invitation, letter, notice, paragraph, report, précis and diary writing) assessed at exit level. **Therefore the stated hypothesis is accepted.**

### 6.4 Discussion

The purpose of the study is to find out the effectiveness of Electronic Portfolio on developing writing skill among English teacher trainees. The Electronic Portfolio
Findings, Recommendations and Conclusions

Documentation adopted to enhance the writing skill of teacher trainees in English has resulted in the overall improvement and different dimensions in the post test. This finding is consistent with MahaAlawdat (2013) who showed that using e portfolios motivated and enhanced students’ writing, language learning, assessment, and technical skills and experimental study conducted by Saban Cepik and Ahmet Erdost Yastibas (2013) who founded that e portfolio is equally effective in Turkish EFL learners’ speaking skills as it is with their writing skills. Since English teacher trainees are going to be the future English teachers, the investigator found that they are the appropriate population to be targeted for the study.

The researcher had adopted pre-test post-test as her experimental design. It was found that the students’ abilities in writing were not significantly different in the pre-test but after the experiment; it was observed that the scores of the students in the experimental group were significantly higher than those of the students in the control group. The data also revealed that there is an increase in the mean score of Control group in the post test in enhancing writing skill in English, from the pre-test although the treatment was not given to them. This shows that the traditional method of teaching has got its own significance in enhancing the writing skill in English of teacher trainees. The tremendous increase in the post test scores of Experimental group in enhancing writing skill in English shows that the electronic portfolio documentation is more effective as this increase is greater than that of control group. Since the respondents are teacher trainees who had already completed graduation or post-graduation, it is no wonder that the classical method of teaching could enhance their writing skill. Moreover they learn English from the schooling itself. This is in line with the experimental research conducted by Vanaja N (2013) who found out the effectiveness of cognitive and affective intervention strategies in enhancing writing skill in English among English B Ed trainees.

The research findings are in congruity with the study of Hiradhar (2012) who established the effectiveness of a technology enabled language enhancement program for written communication skills of ‘English as a Second Language’ (ESL) learners at tertiary level. The investigator adopted ‘peer assessment’ as a technique to improve the writing skill of teacher trainees and the use of this strategy is concurrent with the findings of Ru Chu Shih (2011) who suggests that incorporating peer assessment
using facebook in learning English writing can be interesting and effective for college level English writing classes. Also it echoes the study conducted by Muhammad ATHAR HUSSAIN., et al (2012) in which 94.2% respondents perceived that fellow students’ feedback and observation is helpful in resolving students’ problems in learning.

Since Electronic Portfolio documentation is also a type of blogging, it sounds similar with the findings of Maria B Cequena (2013) who matched students’ perception that blogging helped the students to improve their writing skills because of their peers’ constructive feedback.

The investigator manipulated different types of discourse as progressive tasks to develop the descriptive writing among English teacher trainees. This is in agreement with the findings of Mansoor Tavakoli Zahra Amirian (2012) who made a significant contribution by his finding that the use of portfolio assessment in the classroom in an EFL context affected participants’ achievement in their overall writing ability and hence led them to create types of discourse appropriate to academic settings.

The researcher adopted reflective practice in her experiment in the form of peer correction, teacher reflection and self-reflection. This practice confirms with the study of Yesilbursa A (2011). The purpose of the research was to identify the characteristics of group of Turkish pre service English language teachers’ reflective writing. The results present significant findings for teacher educators of the reflective processes of PSTs at a critical time of their professional development as they stand at the interface of theory and practice. The reflective practice adopted by the researcher is also in tune with the case study of Wesley Pitts and Rachel Ruggirello (2012) who focused on the electronic portfolio (e portfolio) as a portrait of teacher growth in an in service chemistry education graduate program. Findings showed that successful e portfolio entries illustrating reflective practice were created when teacher participants explicitly showed how they experienced growth (increased professional competency) over time through well-coordinated sets of baseline and post baseline evidences.
The teacher educator uploaded rubrics for each of the discourse through which she assessed the teacher trainees. The rubrics used in the current study could help developing the reflective practice. In this study, the researcher took the role of a mentor as well as a teacher. During one whole semester, the researcher spent a great deal of time and labour in correcting and assessing the assignments of 35 teacher trainees. The researcher was supposed to correct the trainees’ comments in terms of vocabulary, spelling, punctuation and grammatical errors. Also the instructor had to be cautious not to hurt the students’ ego. So the teacher educator’s reflection was kept confidential ie it could be viewed by that particular trainee only. The teacher educator had to motivate them to comment on one another’s work. The researcher would intervene and provide the correct comments if a student made an incorrect evaluation of another student’s writing. Therefore incorporating peer assessment into English writing could be time consuming for teachers of English.

As the limitation, it can be claimed that internet facilities are rarely available in the teacher training institutions in Kerala. It will moderate the effect of electronic portfolio documentation on writing and they are left untouched in the current study. Similar difficulties were found in the results of the case study made by Bassma Basheer Nomass (2013) who showed that most of the students prefer the use of technology, especially computers, in developing their second language skills. However, it seems that the technical capabilities of their college are almost poor, and there was a weak tendency for encouraging students to use technology in the classroom lessons. So further studies are required in EFL context to investigate in these areas. In conclusion, though similar results have been found, the study differs from the others as it focuses on the effectiveness of Electronic Portfolio documentation on the EFL writing of teacher trainees instead of EFL learners of Kerala.

6.5 Implications of the research

The findings of the research proved that the implementation of e portfolio assessment at teacher education level yields good results in improving the writing competence in English. E-portfolios provide rich opportunities for metacognition through periodic reflections which may help students to develop an array of outcomes
and skills. Reflections on work saved in e-portfolios can 1) build learners’ personal and academic identities as they complete complex projects and reflect on their capabilities and progress, 2) facilitate the integration of learning as students connect learning across courses and time, 3) be focused on developing self-assessment abilities in which students judge the quality of work using the same criteria experts use, 4) help students plan their own academic pathways as they come to understand what they know and are able to do and what they still need to learn. Structured reflections helped the students to analyze their learning experiences to reveal and understand outcomes that might otherwise have been missed. The teacher trainees became skilled writers initiating cognitive processing for producing written text—technically correct, usable in content and attractive in format.

- Writing dialogue requires elaboration of thoughts and feelings of the characters. Moreover the central idea of the dialogue should be focused, insightful and richly detailed. The researcher provided progressive tasks in the electronic platform for teacher trainees to frame dialogues and the above competency is shown in their increase of post test score 8.77 from pretest score 5.31.

- In letter writing ideas are to be expressed in a clear and organized fashion. It requires salutation and closing. The researcher provided e platform where the teacher trainees can view their peers’ work and can develop on their own. Their development can be observed in the significant difference between pretest and post test scores which varies from 6.2 to 10.4.

- When one writes invitation, one should follow the format and provide exemplary examples. E platform constructed by the researcher provides best models, through which the teacher trainees improved a lot which is evident in the difference between pretest and post test score which ranges from 5.91 to 9.2.

- Notice writing is brief but relevant matters should be included in it. It requires skill to write short simple sentences. Electronic portfolio offers opportunity through peer and teacher reflection to develop this competency which can be seen in the improvement of post test scores to 7.63 from pretest score 4.69.
- Paragraph writing should have a main idea and its supporting details. It is a skill to organize a paragraph without spelling mistakes and grammatical errors. When one writes paragraphs in sequence provided with immediate feedback and reinforcement, one improves a lot in that discourse. Electronic portfolio through progressive tasks helps the teacher trainees to come up with their own ideas and their progress can be seen in post test score 10.43 from pretest score 4.43.

- Report writing is an essential skill for professionals. Information is to be presented in an effective order. E portfolio offers models of good report which teacher trainees can imbibe. Their difference in the pretest and post test scores which varies from 3.91 to 11.46 indicates their improvement.

- In precis writing, key ideas are to be condensed concisely in one’s own words which require good writing skill. Subsequent progressive tasks provided by e portfolio helps in expressing one’s own idea based on a given text and the teacher trainees’ writing skill enhancement is evident in the post test scores 7.17 from pretest score 3.4.

- In diary writing there should be a creative and unique voice. The format is also important. The word files uploaded in the e portfolio provides good models of diary writing. It helps the teacher trainees to maintain a diary in their life. Their pretest and post test scores that ranges from 3.23 to 7.09 indicated that they have improved in this discourse also.

NCFTE(2010) expressed its view on learners as ‘the adult learners are autonomous and self-directed, have a vast amount of life experiences and knowledge, are pragmatic and goal-directed and respond better to problem solving and task-oriented learning’. To envisage this expression the investigator created the e learning environment, where the teacher trainees were given full freedom to learn at their own pace, interact themselves and with peers, and reflect upon their growth. Self-reflection promotes learning better. This is evident in the difference between pretest score and post test score of experimental group. The present study tries to incorporate various types of discourses in an e-platform in enhancing the writing skill of teacher trainees thereby tries to reduce the monotony of ordinary way of traditional learning. Since, the developed and implemented e-learning course material is always available
in the internet; each and every learner can use this content, whenever and wherever they want. So it allows the freedom and self-pace of the learner to develop the writing skill.

6.6 **Recommendations**

Several recommendations are emerged.
- Assessment should be a formative ongoing process providing feedback to students as they progress towards a goal.
- It is recommended to offer orientation for teacher educators in implementing electronic portfolios.
- Opportunities should be provided for teacher trainees to practice reflection during class time.
- Teacher educators are recommended to encourage teacher trainees to take part in the assessment process especially self and peer assessment.
- Teacher trainees’ needs and interests should be taken in to consideration in any suggested portfolio assessment program.

6.7 **Suggestions**

1. This research can be replicated in other subjects in teacher education.
2. Electronic portfolio can be made use of in developing other language skills like listening, speaking, and reading.
3. A further research is needed to study the challenges involved in the implementation of electronic portfolio in educational institutions.
4. More research is needed in alternative assessment in place of standardized evaluation system.
5. Process based learning should be given preference rather than assessing the learner with a single standardized evaluation system.
6. Teacher education institution should take initiative to bridge the gap between technology and pedagogy.
6.8 Conclusion

As the data in this study indicated, participants in the electronic portfolio group significantly outperformed those in the conventional group on different discourses of writing. It is concluded, therefore, that the electronic portfolio initiated a meaningful increase in the mean score of the experimental group. E portfolio, as illustrated through the results of this study, can be viewed as an alternative assessment blended with internet technology. In this recent mode of instruction, the instructor can be in touch with learners and provide fast online feedback as a guide and stimulator rather than the sole provider of the correct answers. Taking participants’ reflection into consideration, the teacher can promote learners’ self-assessment and feeling of ownership toward their portfolio. Furthermore, as the related literatures reveal, e portfolios can be blended with other educational programs to enhance learners’ autonomy and self-reflection. The results of this study can also imply that employing e portfolios in teaching L2 writing skill may involve learners themselves in the process of self-assessment of their own progress during the course. Not only are learners involved in the process of assessment, they can also reflect on their writing through developing e portfolios.

Although more research is required, the results of this study show that an institution, or more specifically a course, really needs to identify the learning outcome of using the e-portfolio and ensure that the e-portfolio is aligned with the rest of the course. This goal then needs to be explained clearly to the students, and perhaps has to be better understood by faculty and support services. Students need to know why they are doing this and what is in it for them. E portfolios are gaining support as a way for students, faculty, programs and institutions to learn, assess, and to improve through a mutual focus on the work that students complete over time –work that can both facilitate and document a range of ambitious learning outcomes.