Investigating EFL Learners' E-portfolios based on Halliday's Functional Linguistics

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Abstract: *This study aims at the analysis of Persian EFL learners' e-portfolios based on the Halliday's seven functions of language. The participants of this study were 60 EFL learners who were studying English at private language institutes and their mother tongue was Farsi. The data are gathered Weblog-based e-portfolio assessment. The results of this study showed that the dominant strategy among Persian EFL learners is Personal function and the least observed strategy is Heuristic. The data clearly show that learners use the seven functions of Halliday in their e-portfolio as a communicative tool that acts as an interactional method in order to establish connections with others through a mixed game (to use Weigand's 2010 terminology). Through this mixed game, learners use different skills to interact with others. The results of this study are useful for teachers, learners, researchers, and material developers. The article concludes that e-portfolio analysis is a suitable strategy in order to get familiar with learners' needs and thoughts. Therefore, e-portfolio analysis should be part of any educational context.*
Keywords*: EFL learners, e-portfolio, Halliday, Function.*

I. Introduction

Electronic portfolios or e-portfolios are collections of electronic evidence assembled and managed by a user, usually on the Web. E-portfolios are important tools in order to improve learners' skills in many aspects such as, *inter alia*, management, writing, and learning strategies. As related to education, the e-portfolio can be regarded as a collection of a students' work that can improve learning by providing a way for them to organise, archive, and display work. The electronic format permits the instructor to assess students' portfolios via different tools such as the Internet, CD-ROM, DVD, etc. E-portfolios have become a well-known alternative to paper-based portfolios since they present the chance to review, interact and give feedback in an asynchronous manner. More than this, students are capable to think upon their work, which makes the experience of making the e-portfolio both enjoyable and meaningful. A student e-portfolio can be shared with an intended employer or employed to record the achievement of a certain program or course specific learning outcomes (Lorenzo &Ittelson, 2005).

The application of e-portfolios isvery common in the programmes with departments of education. Most teachers in pre-service programmes are required to gather an e-portfolio to show competencies required to gain teaching certificates. Students' e-portfolios are continuously being utilised in other fields such as communications, business, math, nursing, engineering and architecture. As related to e-portfolios, they enjoy six major functions as follows (Lane, 2007):
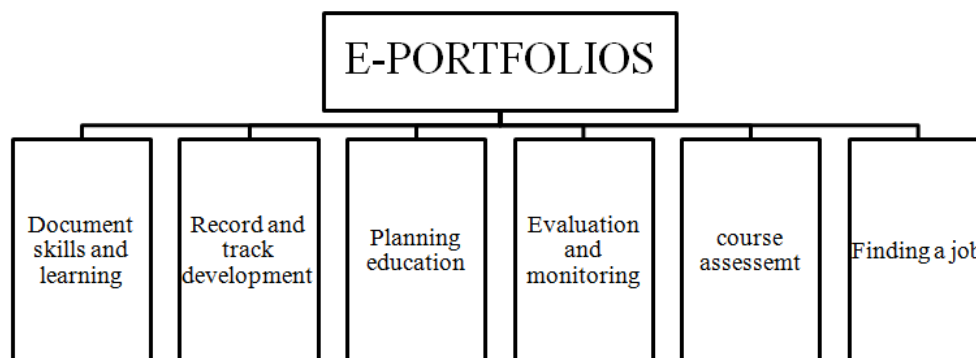
Figure 1- Functions of e-portfolios (Lane, 2007)

Generally speaking, e-portfolios improve critical thinking (Prosser, 2004) and support the development of technology literacy skills (Richardson, 1997). Academia now uses e-portfolios to record courses or organise designs that may be shared with colleagues to improve teaching and learning. A teaching e-portfolio is used to represent job accomplishments.

E-portfolios are also useful to create an independent and self-directed way of thinking, according to Strivens (2007). The individual is, therefore, responsible for their learning and the choice of where to show their proficiency. People are also obliged to think about what they have learned and how they plan to build and improve in the future. This helps individuals to become better critical thinkers and helps them to improve their writing and organisational skills. Today, many students are utilising multimedia, for instance, Facebook, Twitter, and texting. The e-portfolio, on the other hand, is a more formal context where individuals must use both their knowledge of how the web works and the kind of message they intend to communicate. In this regard, students' familiarity and comfort with the web at times can be a shortcoming if they are not educated to use e-portfolios in the proper way, suggests Lane (2007). A lot of universities and faculties are currently working hard to make sure that students are learning how to practice and organisee-portfolios so that they would be capable to utilise them to the best of their capabilities. Therefore, e-portfolios have an important role in the academic life of individuals and many teachers put emphasis on the creation of e-portfolios by the students. The main research questions of this study are:

1- Are there any differences between the e-portfolios with regard to functions?

2- Are there any differences between the functions with regard to gender?

II. Review of the Literature

Portfolio had become a popular buzz word by the early 1990 in educational context. Since that time, many definitions and various assessment purposes have emerged. (Kirkwood, 2010). This claim was supported by Collins (1992) who mentioned, portfolios go beyond serving as a storage place for students' work and they are considered as personalized representations of a student' s own effort. In the same line Wolf (1989) suggested that "[p]ortfolio is a unique opportunity for students to learn, to monitor their own progress and take responsibility for meeting goals set jointly with the teacher" (as cited in O'Malley & Pierce, 1996, p. 36).

An e-portfolio is a digital collection of the students' work and reflections describing their learning experiences and professional accomplishments (Chen, 2013). This kind of assessment affects learning positively. Chang (2008) support this claim, as his research about web folio assessment indicated that how using web folio assessment strategy affected learning. He researched about achievement and self- perceived learning performance. Also, he claimed that using web folio assessment system significantly improved self-perceived learning. Another research study conducted by Lopez-Fernandez and Rodriguez-Illera (2009) investigated students, perceptions, attitudes and behavior when using an e-portfolio. The result showed that the learners had positive opinions and self-efficacy through the e-portfolio as a tool for assessing and managing learning. Learners emphasized that the electronic portfolio was a personal development learning tool. Other instructors and learners can provide feedback and comments. Ease of revising and possibility of fast online feedback make e-portfolios more fruitful. Students can also show their electronic portfolios to employers when interviewing for jobs (Prosser, 2004).

Prior knowledge: Meaningful learning comes from integrating current knowledge into previous knowledge (Biggs, 1982). Prior knowledge refers to students' characteristics, their previous experiences, and their new knowledge (Entwistle&Ramsden, 1983). Using prior knowledge involves linking known concepts and the learner' s background and personal attitudes to new meanings and concepts. Ausubel, Novak and Hanesian (1987) investigated the effect of prior knowledge on learning outcomes. To do so, they targeted two groups of students attempting to use meaningful learning strategies to investigate the relationship between their learning outcomes and their prior knowledge. Both groups of students tried to use meaningful learning strategies, but those students with poorly developed prior knowledge did not achieve high marks. In contrast, those students with well-developed prior knowledge experienced a positive effect on their marks. This study showed that incorporating new knowledge into prior cognitive structure leads to meaningful learning (Bluice, Ellis, Goodyear, &Piogat, 2010).

Prosser (1987) focuses on the effect of students' levels of prior knowledge on their learning outcomes. He believes that a reasonable level of prior knowledge is required to achieve learning. A high level of prior knowledge provides conditions for adopting a deep approach to learning (Entwistle&Ramsden, 1982) which is associated with high quality learning outcomes. The second one is perception. It refers to the way students perceive their learning context. Furthermore, students' ideas about teaching, workload, and goals form their perceptions. Aresearch conducted by (Prosser &Trigwell, 1999) revealed that there is a link between students' perceptions and their learning outcomes. Another research has shown that students' perceptions of context are a key factor in how they learn (Prosser &Trigwell, 1999). Students adopt differentlearning approaches according to their perceptions of the context. For example, when the quality of teaching is good, the goals and assessments are clearly defined, and students are learning in an independent climate, they are more likely to adopt a deep approach to learning (Prosser, 2012).

The last one is product or outcomes that refer to what students learn and the quality of their learning. These outcomes are influences by students' preconceptions, learning approaches and perceptions (Prosser, 2004). The review of the literature shows that the e-portfolios have not been investigated by research studies up to know and there is a need to deal with them based on the functions of language proposed by Halliday.

III. Method
In this part of the study, we deal with participants, the procedure of data gathering, and the procedure of data analysis.

3-1- Participants
The current study was done at two popular language institutes in Mashhad, a city situated in the north-eastern part of Iran. There were 60 participants (30 male and 30 female). Random sampling was used to select the participants. Their native language was Farsi and they aged between 20 and 35.

3-2- Procedure
After gathering the e-portfolios and categorizing them in a specific file, they were analyzed based on Halliday's systemic functional grammar. In this study, Halliday's (1975) seven functions of language are applied to account for the functions observable in the e-portfolios. For Halliday, people are motivated to develop language because it has special purposes or functions for them. Therefore, the first four functions will help the individuals to account for physical, emotional and social needs. According to Halliday, they are called instrumental, regulatory, interactional, and personal functions. The following is a description of the functions (Halliday, 1975):

- Instrumental: This is when the child uses language to express their needs (e.g. "Want juice")
- Regulatory: This is where language is used to tell others what to do (e.g. "Go away")
- Interactional: Here language is used to make contact with others and form relationships (e.g. "Love you, Mummy")
- Personal: This is the use of language to express feelings, opinions, and individual identity (e.g. "Me good girl")

Moreover, the next three functions are heuristic, imaginative, and representational, all helping the individual to grasp the nature of the environment.

- Heuristic: This is when language is used to gain knowledge about the environment (e.g. 'What is the tractor doing?')
- Imaginative: Here language is used to tell stories and jokes, and to create an imaginary environment.
- Representational: The use of language to convey facts and information.

IV.Results and Discussion

The results of this study showed that the dominant strategy among Persian EFL learners is Personal function and the least observed strategy is Heuristic. The data clearly show that learners use the seven functions of Halliday in their e-portfolio as a communicative tool that acts as an interactional method. Table 1 shows a summary of the main results:

Table 1: *A summary of the main findings based on the seven functions and the gender distribution*

Functions	Male participants	Female participants	Total
Instrumental	10	9	**19**
Regulatory	22	12	**34**
Interactional	3	15	**18**
Personal	27*	24*	**51**
Heuristic	2	1	**3**
Imaginative	3	6	**9**
Representational	5	11	**16**
Total	**72**	**78**	**150**

According to the results mentioned in Table 1, it is clear that for both male and female participants, the most used function is personal (*n*= 51). The least used function is heuristic (*n*= 3). Among this category, male outnumbered the females in using this function, although the differences are not that much attractive to notice. For female participants, over all, 78 functions were identified while for men, 72 functions were identified. In order to address the first question of this study, the following figure shows the most used functions of this study:
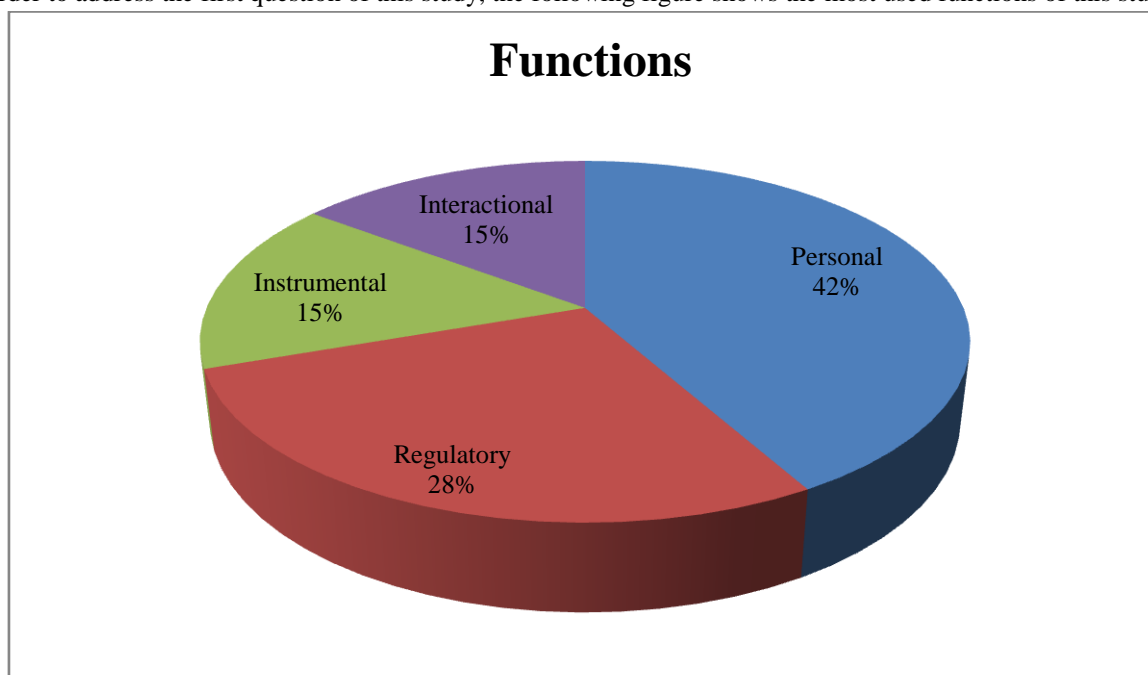

Figure 1- The main functions observed in e-portfolios

As Figure 1 reveals, almost half of the e-portfolios are related to personal function. It shows that participants use this function most often. Teachers can use this knowledge in order to find out educational problems that learners have in the course of the program.

In order to answer the second question of this study, we should analyze which functions are mostly used for women and which are used mostly for men. As for the male and female participants of this study, the most used function is personal. However, male participants outnumbered female participants with regard to the observance of this function. To provide a good comparison of the differences and similarities between male and female speakers, Figure 2 is used as a yardstick for the comparison between the two:
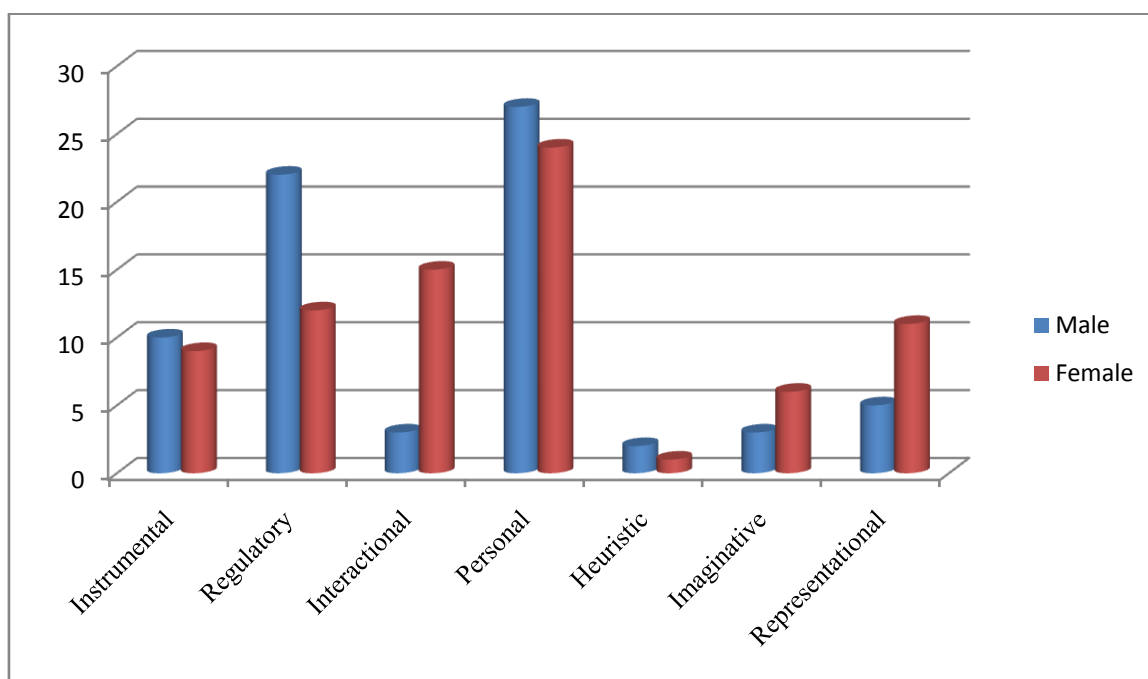

Figure 2- The differences between male and females

Figure 2 clearly shows that most dominant functions are related to the first four functions. To recap, the first four functions will help the individuals to account for physical, emotional and social needs. It means that with regard to e-portfolios, most functions are related to physical, social, and emotional needs of the learners. This information can be useful in analyzing the problems related to issues mentioned earlier.

V. Conclusion

The aim of this study was to analyze the e-portfolios based on Halliday's seven functions of language. It was found out that male participants as well as female participants used personal function most often. This function is conceptualized as the use of language to express feelings, opinions, and individual identity. We can conclude here that e-portfolios are a very good tool that teachers and researchers can use in order to understand the learners' feelings and opinions with regard to their educational progress. As related to the second question of this study, it was figured out that men outnumbered women in using personal function. The least used function among men and women is heuristic.

The findings of this study can help the teachers to find out learners' idiosyncrasies and use this knowledge in order to improve learners' strategies. Researchers can also use the functions provided by e-portfolio analyzes to grasp learners' way of dealing with educational problems. Also, there is a possibility for cross-cultural comparison. The results of this study can provide a yardstick for other similar studies.

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