

Developing *Icollect* Mobile (Android and Iphone-Based) Application for Arabic Language Teaching

¹Mohd Feham bin Md. Ghalib, ¹Haslina Hassan, ²Muhammad Sabri Sahrir,
²Nurairhan Mat Daud, ³Mohaida Mohin and ⁴Media Anugerah Ayu

¹Kulliyyah of Islamic Revealed Knowledge and Human Sciences, International Islamic University Malaysia

²Kulliyyah of Languages and Management, International Islamic University Malaysia

³Institute of Education, International Islamic University Malaysia

⁴Kulliyyah of Information and Communication Technology, International Islamic University Malaysia

Abstract: The present study presents the steps taken to produce a mobile e-portfolio for Arabic learners, which is named *iCollect*. Common e-portfolio features and suggestions by e-portfolio experts were considered when designing *iCollect*. Its prototype, which was web-based, was shown to a sample of the target group. They expressed their preferences for Dashboard, Profile, Settings, Journals, Artifacts, Portfolio, Connect, Members and Question functions which have been integrated with the relevant Web 2.0 tools. Their feedback was used to improve *iCollect* further. The mobile version took into account the smaller phone screen size. The availability of Arabic scripts makes it suitable for learning and teaching Arabic.

Key words: e-portfolio • *iCollect* • Mobile Learning

INTRODUCTION

E-portfolios can be designed to form a compilation of students' works from the first day they enroll in a course until the last day of their study. The portfolio may consist of information on students' assignments, artifacts, learning experiences, views and reflections on the courses taken. The students can share this information with their instructors and peers [1]. The application of web-based e-portfolio also provides an alternative for instructors in evaluating their students' performances.

The main purpose of creating and using a learning portfolio, as stated by [2], is "to improve student learning by providing a structure for students to reflect systematically over time on the learning process and to develop the aptitudes, skills and habits that come from critical reflection" (p. 15). He identified three important components of the learning portfolios: reflection, documentation and collaboration. Students can work collaboratively with those involved in the learning process which includes the instructors, peers and the communities.

E-Portfolio Development: Developing an e-portfolio platform can be a tedious process [3, 4]. While [3] divided phases of e-portfolio development into five, which are, definition, working, reflection, connectedness and presentation, [4] adopted the generic instructional development model of ADDIE (Analysis, Design, Development, Implementation, Evaluation). It is, however, noted that a need analysis is a must-have component in both proposed models. [5] outlined the importance of having this analysis to ensure that the objective set for the teaching and learning scenario can eventually be realized. [6] highlighted the importance of considering students' views when developing an e-portfolio. Other than that, issues pertaining to the extent of technological complexity, robustness of features and needs of end-users (based on research) would also need to be addressed when developing a technological tool [7].

Mobile Learning and e-Portfolio Applications: The increase in the use of mobile devices call for a relook at the e-portfolio as a platform for learning. Many studies have looked into the development of mobile learning

systems to enhance student learning [8-10] and their effectiveness [11-15]. Research has shown that the use of mobile technology was effective in a wide range of activities for learners of all ages [16-18]. Studies that focused on students' perceptions and attitudes in using this technology revealed that the integration of mobile-learning into the classrooms generated strong positive interests among students [11, 19-23]. Studies indicated that students enjoyed learning via mobile devices [19, 23, 24] and they believed that they were competent and at ease when using mobile devices in learning [25]. Many found the mobile applications to be a more convenient tool for learning [11, 23, 26].

Among the e-portfolios systems that are equipped with mobile applications are *PebblePad*, *PortfolioUP* for *Mahara*, *iPortfolio mobile* *Curtin University* and *Epsilon mobile* [27]. In a mobile e-portfolio environment, [27] posited that there are three cycles of applications. These are planning, doing and reflecting. In the initial cycle, the suitable applications are the presentation software such as Keynote, iMovie, Prezi and Powerpoint. This is followed by applications that are meant for completing certain tasks such as Blogger, Wordpress, Tumblr, Skydrive, Google Docs and Dropbox as well as portable camera and recorder apps. Software such as Microsoft Word and Pages would be suitable for the final cycle which is to reflect. Users would, however, need to access the various applications in order to complete a task. A system that integrates all the functions would be more convenient to a user. The challenge in producing such a system includes the need to support multiple platforms, matching technology with pedagogy, using the menu in tick-box and pull-down styles and dealing with multimedia features [28].

Problem Statement: Though there is an increase in the number of studies on the use of mobile e-portfolios in learning, there is only a dearth of research on the use of e-portfolios for teaching and learning Arabic. In fact, the use of computer-assisted technology in acquiring this language is still inadequate [29-31]. This is further compounded by the scarcity of technological inventions and innovations in the area of Arabic language teaching and learning. Among the factors for the lack of software in this area are the different linguistic features and writing system of Arabic [30]. Thus, the production of computer-based software for Arabic language teaching and learning is timely [32]. The current study looks into the development of an e-portfolio for Arabic learners, which will be named *iCollect*. Focus will be given on suitable features for this kind of mobile e-portfolio.

Research Objectives: The objective of this study is to identify features of a mobile e-portfolio that would suit the needs of Arabic language learners. The specific objectives are:

- To identify the functional tools that are preferred by Arabic learners ; and
- to develop the suitable interface for a mobile version of *iCollect*.

Background of the Study: This study took place in Malaysia. In this era of technology, many academics in the Malaysian Higher Education Institutions (HEIs) have started to integrate information and communication technology or ICT into their classrooms. In line with the country's aspiration to become a developed, prosperous and competitive nation with human capital of first-class mentality, a document entitled The National Higher Education Strategic Plan (NHESP or the Malay Acronym PSPTN) published by the Ministry of Higher Education (MOHE), was introduced in 2007. As stated in this NHESP (2007-2010), the transformation of higher education focuses on the development of holistic Malaysians who are intellectually creative, innovative, adaptable and capable of critical thinking. In this National Higher Education Strategic Plan, the Ministry has delineated seven strategic thrusts that include "improving the quality of teaching and learning", which is thrust number 2. (Malaysian Ministry of Higher Education, 2007).

One area where the technology can be integrated is the teaching of Arabic language. It is one of the foreign languages that are taught in selected schools in Malaysia. Many of the universities are also offering this course to their students (some are compulsory and others are optional depending on the programme). Many initiatives have been taken to improve the teaching of this language. One of them is the integration of technology into the curriculum. This is, however, challenging as there are not many available materials to make this possible. The use of an e-portfolio may help in making the teaching of Arabic more effective and may help teachers to keep abreast with the latest development in the field.

Research Procedures: This study is divided into three phases, namely the developmental phase followed by elicitation of user requirements and an improvement stage based on users' responses. In the third phase, the mobile version of *iCollect* was created based on the feedback given by the end-users to its web version (Figure 1).

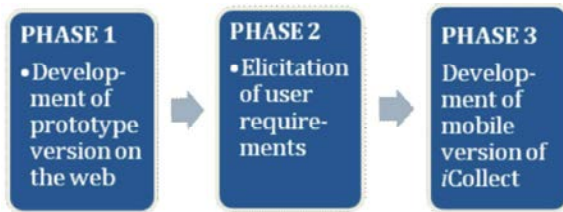


Fig. 1: Three phases of mobile e-portfolio development

Table 1: Demographic information of the subjects of study

	Male	%	Female	%
Year 2	26	68.4	6	15.8
Year 3 and 4	2	5.3	4	10.5
Total	28	73.7	10	26.3

Developmental Stage: The first was the developmental phase whereby the prototype of e-portfolio was created using *Elgg*, an open source e-portfolio system. Functional tools which consisted of ‘Dashboard’, ‘Profile’, ‘Settings’, ‘Journals’, ‘Artifacts’, ‘Portfolio’, ‘Connect’, ‘Members’ and ‘Questions’ formed parts of the web-based *iCollect* features.

Elicitation of User Requirements: This phase elicits responses from the target group. A questionnaire survey was distributed to 38 Arabic language learners via *SurveyMonkey.com* from 15th October until 30th November 2012 to ascertain the functional tools that they preferred. The demographic information on the subjects are given in Table 1:

The students were asked if they subscribed to any social networks such as Facebook, Twitter and others. The results revealed that the majority of them (97.4%) subscribed to these networks. Facebook was the highest (100%) followed by Twitter (32.4%) and others (13%). Familiarity with these networks may have a bearing on the features that they would prefer on *iCollect*.

The same students were asked to use the web-based *iCollect*. They were then asked to rank the functional tools according to their preferences. The lower the number the higher is the rank. Their responses are displayed in Table 2:

Table 2 shows that the most popular feature of the web-based *iCollect* is ‘Profile’ and the least is ‘Questions’. They also suggested that the functional tools be maintained or changed with minor modifications if the service is to be accessed using mobile devices. When asked what functional tools they would like to have on their mobile devices, the majority went for ‘Journals’ (80.8%) and ‘Profile’ (76.9%). We can see this similarity with the social networking sites that they subscribed to. The students’ responses are tabulated in Table 3 below:

In the open-ended section of the questionnaire, students were asked what they thought of *iCollect* and what improvement could be made to its mobile version. Four main themes emerged out of their responses (Table 4).

Table 4 suggests that the students liked the interface and they found *iCollect* to be user-friendly. They also suggested that certain tools be added to the e-portfolio. These include polling software and stories in Arabic.

The students were also asked whether they felt that the application could help increase their motivation to learn. A total of 83.9% of the respondents indicated that *iCollect* could help in increasing their motivation and engagement in learning the Arabic language while 87.1% of them believed that *iCollect* could assist them in improving their Arabic language skills. A large majority of respondents (93%) indicated that this service would help improve their performance in the language.

Development of the mobile version of *iCollect*: students’ feedback was taken into account when further improvement was made to *iCollect*. The small screen size

Table 2: Overall feedback on web-based portfolio (*iCollect*)

Functional Tools	Dashboard	Profile	Settings	Journals	Artifacts	Portfolio	Connect	Members	Questions
PreferableRating	3	1	5	2	6	4	8	7	9

Table 3: Suggested functional tools in the design of a mobile portfolio

Suggestions	Response Frequency	Percentage
Dashboard	12	46.2%
Profile	20	76.9%
Settings	16	61.5%
Journals	21	80.8%
Artifacts	15	57.7%
Portfolio	15	57.7%
Connect	18	69.2%
Members	18	69.2%
Questions	15	57.7%

Table 4: Suggestions for iCollect design

No.	Main themes and sub-themes
1	Interface a- Attractive and beneficial. b- Provides more attractive interface.
2	User-friendly a- Easy to use. b- Free access to all users.
3	Additional tools a- Embed video to enhance listening and speaking skills. b- Consist of Arabic stories for reading skills. c- Provide language games. d- Provide update tools.
4	Supportive tools a- Improve speed of internet connection. b- Support other applications such as Polling, Flipsnack and Vevox.



Fig. 2: Navigation flow of the mobile iCollect application

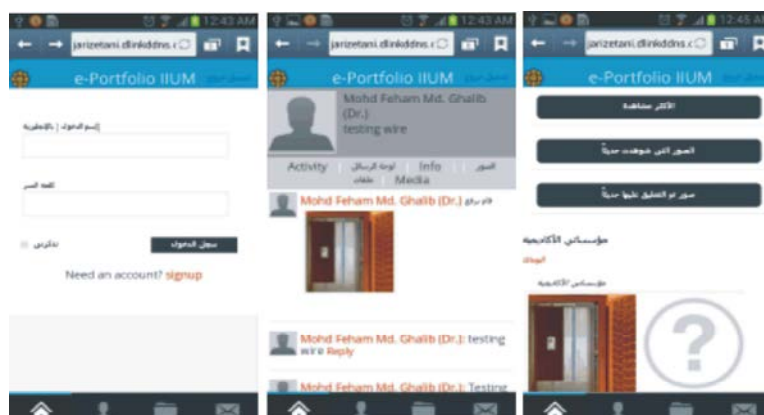


Fig. 2: Screenshots of iCollect mobile application (From left - Login screen, Profile screen and Artifacts screen)

Profile	Dashboard	Journal	Artifacts	Connect	Learning Tools
•Portfolio			•Photo Gallery •Video Gallery •Files upload •Bookmarks •Web 2.0 tool storage	•Members •Chatting •Messaging •Twitter Integration	•Questions •Polls •Bing Translate Integration •Dictionary

Fig. 3: Sub-features under each main feature of mobile iCollect

and a limited number of keypad characters called for some modifications to the mobile version of iCollect. The overall interface of the integrated functional tools were localized to cater to the needs and preferences of the learners. The flowchart of the tools arrangement is illustrated by Figure 2:

To make it accessible to other language learners, the mobile iCollect was designed to support Latin and non-Latin (Arabic) characters. To increase its user-friendliness, the interface is displayed on the screen (Figure 2):

There are radio buttons for users to choose from when selecting a particular sub-feature for all functional tools except for 'Dashboard' and 'Journal'. The available sub-features are displayed in Figure 3:

Users can update their personal information in the 'Profile' section. In the 'Artifacts' section, users can access and upload photos, videos and files of any types. They can also share bookmarks and links to files stored on any Web 2.0 storage tools such as Dropbox and Skydrive. In the 'Connect' section, users can request to become a friend to another user and they can also approve a friend's request. It also allows them to exchange messages with other users. The popular social networking tool like Twitter is integrated in the system.

In the 'Learning Tools' section, users can post questions and ask for opinions. Bing Translator is provided in this section. In the 'Dashboard' section, users can access and keep themselves updated with the latest news. In the 'Journals' section, users can access the list of journals available in the system and can post their journals to the web.

DISCUSSION

The need to build a bridge between technological innovations and users' satisfaction is important to ensure that the use of a tool could trigger learning attainment, engagement and motivation [33-35]. In the present study, the learners shared their preferences for functional tools such as 'Profile', 'Journal', 'Dashboard' and 'Portfolio'. The questionnaire survey indicated that the students found the functional tools on *iCollect* to be user friendly as most of them were already familiar with these tools. They also considered *iCollect* useful for interaction with their peers.

Students' feedback was given consideration in the development of the mobile version of *iCollect*. The functional tools were integrated with a few Web 2.0 tools such as Bing Translation and bilingual dictionary. The findings suggested that *iCollect* has a great potential to improve learning. With the majority of the respondents believing that *iCollect* can promote learning, the possibility of motivating and engaging the learners is higher. *iCollect* can be used to display their works and achievements. As noted by [36], a good use of learning resources or the creation of new learning materials for sharing purposes can help students improve their online presentation skills. The possibility of capturing and storing multimedia on iPhone and most Android devices facilitates the use of 'Artifacts' function for displaying and sharing learners' learning experiences.

iCollect may also be suitable for learners with different learning styles. Those who prefer to make notes of what they read may like the 'Journal' and 'Dashboard' functions of *iCollect*, whereas the 'Artifacts' section may benefit visual and auditory learners [37].

In relation to the general e-portfolio features, the mobile *iCollect* addresses all three iterative cycles [27]. The 'Dashboard' and 'Artifacts' functions serve as tools for planning. 'Journals', 'Connect' and 'Artifacts' can be utilized in the doing cycle. The final cycle which consists of reflection can be addressed by the 'Journals', 'Artifacts' and 'Profile' functions. In short, *iCollect* can function as both workspace and showcase e-portfolios [38].

CONCLUSION

A workable e-portfolio is pertinent to the teaching and learning of Arabic language. The lack of tools that address the needs of Arabic users in technology assisted Arabic classes justifies the development of *iCollect*. Target group feedback shows that they prefer to have 'Dashboard', 'Profile', 'Settings', 'Journals', 'Artifacts', 'Portfolio', 'Connect', 'Members' and 'Question' functions to be integrated into the relevant Web 2.0 tools. These needs are catered for in the development of *iCollect*. The Arabic characters are the most valuable feature to Arabic learners. The availability of *iCollect* may help to make a significant contribution to the learning of Arabic. It may help to make the teaching and learning process of this language not only efficient and effective but engaging and enjoyable to the students.

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