

Empowering Education for Refugees: Enhancing the perceived ease of use and usability of the Edubox in Jordan

Public summary

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Technology has become an important part of our daily lives, it influences the way in which individuals communicate, gain access to information, and complete various tasks (Adams, 2019). Even though there is a quick development in technology, there is also a clear divide in the access to technology. Access to and acceptance of technology among underserved communities is often not common (Chang et al., 2004). The Technology Acceptance Model (TAM) is a useful framework for studying technology

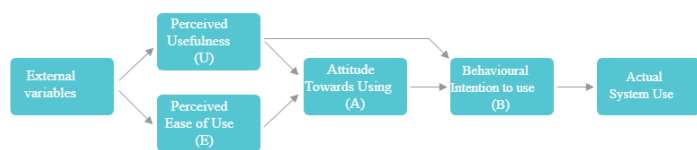


Figure 1: Technology Acceptance Model

acceptance. The TAM suggests that the acceptance and adoption of technology by individuals are primarily influenced by two factors: perceived usefulness and perceived ease of use (Davis, 1989).

The EduBox is an educational technology, it is a self-contained and modular learning environment, designed to give underserved communities, such as refugees, the chance to still obtain a form of education (EDUBox, 2023). Currently, the EduBox has been placed at the Yarmouk University in Irbid, Jordan, where it can be used as a classroom for vocational trainings for Syrian refugees. However, the Edubox is barely being utilized by the refugees. Hence, the scope of this thesis is to redesign the Edubox in order to enhance both its perceived usefulness and ease of use, ultimately leading to greater Edubox utilization.



Figure 2: Graphic of the Edubox

Through the application of the design thinking method by Guido Stompff (2022) the scope will be answered. The design thinking method incorporates problem definition, conceptual design, concept development, product development, and product evaluation.

Problem Definition

Firstly, it is important to understand the challenges which contribute to the underutilization of the Edubox and what the roots causes are of those challenges. In order to gain insight on the challenges encountered explorative user interviews were held with Dr. Reem, director of the refugee centre, Manar, lecturer and linguistic in Jordan, and Nikola, representative of the Edubox foundation. Based on the interviews table 1 has been made and represents the challenges that the Edubox faces.

Table 1: Challenges contributing to the underutilization of the Edubox, root problems and effect

Challenge	Root problem	Effect
Can not accommodate many refugees at the same time	<ul style="list-style-type: none"> - The Edubox was designed to accommodate only 12 students, but only about 6 students fit. - Might be a lot of equipment in the Edubox, that was not considered 	<ul style="list-style-type: none"> - Small groups (or a few individuals) can only use the Edubox
It is too hot in the Edubox	<ul style="list-style-type: none"> - The Edubox is poorly insulated 	<ul style="list-style-type: none"> - During the day the Edubox is too hot to sit in it. - Edubox can only be used between 9:00 and 13:00 -
To provide a quality course/program	<ul style="list-style-type: none"> - Not enough financial support - No (digital) board 	<ul style="list-style-type: none"> - Limited funds for programs for refugees
Edubox is hard to access	<ul style="list-style-type: none"> - Can only be used between 9:00 and 13:00 - It is hard to open the door of the Edubox - The Edubox is situated at the Yarmouk University 	<ul style="list-style-type: none"> - The EduBox is accessible in a short timeframe - Edubox is not used during the day due to the heat - People do not want to go through the trouble to open the Edubox
More students than refugees are using it	<ul style="list-style-type: none"> - Programs are not or barely organized for refugees in the Edubox - Refugees do not know about the Edubox 	<ul style="list-style-type: none"> - Refugees do not use it to gain skills and knowledge
Educators are not familiar with a lot of teaching methods and programs	<ul style="list-style-type: none"> - Need for more effective teaching training (Education - Plan International Jordan, 2023) - Limited resources 	<ul style="list-style-type: none"> - Teachers don't know many teaching methods - Teachers/educators cannot accommodate to the needs of refugees
No accountability and ownership is being taken	<ul style="list-style-type: none"> - In an environment where mistakes are punished, people are less likely to be forthright about them. - When people do not believe they will succeed and do not believe they will receive support, it is too risky to accept responsibility (Miki, 2015). 	<ul style="list-style-type: none"> - No one is take ownership of the Edubox - The Edubox is not used to its full capacity

It is not feasible to solve every challenge, which makes it essential to evaluate the challenges and determine which one should be solved to increase the use of the Edubox.

In the case of the Edubox, the prioritisation matrix, in figure 3, is used to rank the various challenges and determine which challenge is most critical to address in order to increase the Edubox' utilisation. Considering the priority matrix, the emphasis will be placed on increasing accountability and ownership and designing a quality program.

	High impact	Medium impact	Low impact
High Probability	Providing a quality program	No accountability and ownership is taken	
Medium Probability	The door of the Edubox is hard to open, making it hard to access	It is too hot in the Edubox, which makes it hard to work/teach	More students are aware of the Edubox than refugees
Low Probability	Low capacity to accommodate refugees	Educators are not familiar with various teaching methods	

Figure 3: 3x3 probability matrix

Conceptual Design and development

In the conceptualization phase, it is essential to deliberate upon diverse factors that may influence an educational program for Syrian refugees. In the process of it, several critical considerations come into play, including what skills to train, the optimal teaching method for refugees, and the practical strategies for its integration within the Edubox. Ensuring the course meet the demands of education for refugees, Bloom's Taxonomy has been used. Bloom's Taxonomy is a framework that categorises educational learning objectives based on different levels of complexity and specificity (Klimova, 2019).

Focusing on ownership, it is important to considering what are factors that contribute to increasing ownership. One of the biggest factors to consider is that currently the Edubox is not perceived as easy to use, concluded from the interviews, which makes taking ownership of the Edubox complicated for the employees of the refugee centre.

Product development

Considering the points made in the conceptual design and development, it can be concluded that it is feasible to teach an IT-focused course within the EduBox, given its existing availability of course-related equipment, thereby increasing the prospects of employability for refugees. The teaching method will focus on project-based learning, giving the refugees the opportunity to apply what they learn in a project and using the Edubox as a safe space to practice. The course has been designed based on Bloom's Taxonomy.

Evaluation

In conclusion, through following the design thinking process two designs solutions came out to increase the utilisation of the Edubox and make it more acceptable for refugees in Jordan.

The first design solution is focused on an IT course which would give refugees the opportunity to improve and challenge their IT skills and enhance their chances of finding a job and more conveniently integrate into the Jordanian society. These benefits would most likely encourage refugees to follow the IT course and utilise the Edubox, increasing its perceived usefulness and acceptance amongst the refugees.

The second design solution would be a change in the organisation structure by adding a new title as 'manager of activities' which would include responsibility over the Edubox. That individual would work more closely with the Edubox and the refugees and would most likely see the benefits of using the Edubox. As a result, the Edubox more accessible, increasing the perceived ease of use and would be more accepted by the refugee centre and the refugees.

Sources

1. Adams, H. (2019, November 7). Taste of Hamburg-er Festival. BCTV. <https://www.bctv.org/2019/11/07/technological-influence-on-society/>
2. Aim of EDUBox is to tackle UN SGD 4 - Quality Education for everyone. (2016). Universiteit Twente. <https://www.utwente.nl/en/humanitarian-engineering/projects/edubox/#edubox-team>
3. Chang, B. L., Bakken, S., S. Scott Brown, Houston, T. K., Kreps, G. L., Kukafka, R., Safran, C., & P. Zoë Stavri. (2004). Bridging the Digital Divide: Reaching Vulnerable Populations. *Journal of the American Medical Informatics Association*, 11(6), 448–457. <https://doi.org/10.1197/jamia.m1535>
4. Davis, F. (1989). Perceived Usefulness, Perceived Ease Of Use, and User Acceptance Of Information Technology. *Mis Quarterly*, 3(13), 319. <https://doi.org/10.2307/249008>
5. Pikhart, M. and Klimova, B. (2019). Utilization Of Linguistic Aspects Of Bloom's Taxonomy In Blended Learning. *Education Sciences*, 3(9), 235. <https://doi.org/10.3390/educsci9030235>