

## الآية

قال تعالى:

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَلَقَدْ رَفَعْنَا فِيكَ ذَا الْقُرْآنِ الْكَرِيمَ ۝ كَلَّهَا الْإِنْسَانُ مِنْ قَبْلِهِ ۝ لِيُذَكِّرَ الَّذِينَ كَفَرُوا أَنْ كُنُوا رِجَالًا وَمَعَالٍ غَدِيرًا ۝

صدق الله العظيم

سورة الضمير الآية ٥٤

## **Dedication**

**To my parent:** secret of my life and my success.

**To My Daughter:** for her patient.

**To My Dear:** for his support.

## **Acknowledgment**

Thanks to Allah who gave me the health and strength to complete this research. A lot of thanks to all those who support me during the process of this research. Special thanks to my supervisor Dr.Aiman Badri who gave me the initial directions and guidance. A word of appreciation to the family of Alahfad University for welcoming me during the research. I would like to thank Tayeb Mahjoub Lecturer in Getiana Technical College, and Muzamel Happri in Gadarif State.

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## **Abstract**

The aim of this research is to evaluate the interaction of children with E-learning System designed for children outside the school (ELS) in Sudan. This will set ground for future researches in children interaction with computer systems for the ELS beyond to the Sudan. The main objectives of the research were to explore HCI evaluation techniques, design and evaluation tests to evaluate the learnability and attractiveness of ELS among children. The aim of this effort is to provide feedback to ELS designer and provide basis for future ELS interaction evaluation. As the ELS was not yet programmed the research developed prototype system following the paper design. The prototype system focusing on a specific component of the system to test the 12 number and its components. The research developed five tests: usability, learnability, attractiveness, interview about design objects and mouse interaction to measure the interaction of children with the ELS in Sudan. The research used in the evaluation observation methods: co-discovery, peer tutoring and direct observation method and survey methods: interview method. The evaluation was conducted in the real environment in Gadref State in Wad Elmshamer village with all 22 children involved in the project. The results showed that the ELS design is acceptable for children and showed children preferences in colors and illustrated differences between boys and girls in the interaction with mouse and the exercises. The results showed children deal more comfortable with observation method than interview method. The research recommended: minimizes the target and drag process in the project design, use more of the red color, consider differences between boys and girls and support the studies about the project of E-learning should focus on the individual benefits and the benefits appear in the society.

## مستخلص البحث

الهدف من هذا البحث تقييم تفاعل الأطفال مع نظام التعليم الإلكتروني للأطفال خارج المدارس في السودان، وذلك سوف يضع أساس لبحوث مستقبلية في مجال تفاعل الأطفال مع أنظمة الحاسوب ومع نظام التعليم الإلكتروني الخاص بالسودان. الأهداف الأساسية لهذا البحث هي توضيح تقنيات التصميم و التقييم لتفاعل الإنسان مع الحاسوب وإختبارات لتقييم قابلية الإستخدام والتعلم و الجاذبية لنظام التعليم الإلكتروني للأطفال. الهدف من هذا الجهد تقديم معلومات لمصممي نظام التعليم الإلكتروني و تقديم أساس للتقييم المستقبلي للتفاعل مع نظام التعليم الإلكتروني. و بما ان نظام التعليم الإلكتروني لم يصمم له برنامج بعد الباحث طور نموذج على حسب ورقة المواصفات. النموذج ركز على جزء من النظام و هو درس العدد 12 و مكوناته. الباحث طور كذلك خمس إختبارات: قابلية الإستخدام، قابلية التعلم، الجاذبية، مقابلة عن عناصر التصميم و التفاعل مع الفأرة وذلك لتقييم تفاعل الأطفال مع نظام التعليم الإلكتروني في السودان. الباحث إستخدم في التقييم طرق الملاحظة: طريقة الإكتشاف بالمشاركة، طريقة التعلم مع الند وطريقة الملاحظة المباشرة و من طرق المسح استخدم طريقة المقابلة. التقييم تم في بيئة حقيقية في ولاية القضارف في قرية ودالمشمر مع 22 طفل وهم كل الأطفال المشاركين في المشروع. النتائج وضحت أن التصميم مقبول للأطفال و وضحت ما يفضله الأطفال من الألوان و بيئت الإختلافات بين الأولاد البنات في التفاعل مع الفأرة و التمارين. النتائج كذلك وضحت أن الأطفال يتعاملون مع الملاحظة براحة أكثر من المقابلة. البحث وصي ب: تقليل عملية السحب والإسقاط في تصميم المشروع، إستخدام أكثر للون الأحمر ، أخذ الإختلافات بين الأولاد البنات في الإعتبار و دعم الدراسات حول مشروع التعليم الإلكتروني لقياس الفوائد الفردية والفوائد في المجتمع.

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