

# An Improved Model for the Implementation of Web-Based Learning in Adult Secondary School Education in Kenya

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## Abstract

The development of technology, which evolves continuously, has led to the transformation of traditional courses into web-based courses. However, as these e-learning systems grow more complex, involving numerous users with different levels of need, there is a need to have web-based learning models that adequately address such users' needs, taking into consideration their levels of expertise, access and ability to interact with such systems. Most of the existing models present the adult learners with difficulties, as most of them have to concentrate mostly on learning the technology rather than learning the desired content. Most of the difficulties arise from the web-based learning model configurations in use in the country. The majority lack features and capabilities of highly interactive, fast-paced multimedia-supported learning currently demanded by most learners and tutors. Therefore, the main aim of this research was to devise an improved model for implementing a web-based learning programme in adult secondary school education. After analysing the existing models and establishing their operational challenges, an improved model was proposed. The proposed model was statistically tested using sample data. The results showed that recognizing both technological and user attributes along the recognized theoretical frameworks was important in increasing the users' behavioural inclination to use the improved model.

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Therefore, it is recommended that more sensitization to web-based learning should be implemented by the adult education department in the Ministry of Education among adult learners in the country. It is also recommended that system developers should find ways of incorporating additional features into the model without affecting its architecture and function. Finally, there is need for future studies on the causal antecedents of the constructs presented in this research model to provide more precise practical implications.

**Keywords:** Adult Learners; Model; Web Based Learning.

## **1. Introduction**

### ***1.1 Background to the Study***

Close to three decades since the commercialization of the Internet, its impact has been profound in virtually every sphere of human life [1]. The education sector has not been left out by either Internet-driven change or the age of the user/clientele. The educational content on the Internet is increasing rapidly each passing day. As a result, many institutions have been able to place more materials relating to their courses online to supplement and even often replace the conventional pedagogical classroom instructions, as outlined by Peters and Robert [2]. Though web-based e-learning education research and development presently focuses on the inclusion of new technological features and the exploration of software standards, research has established that far less effort is directed into finding solutions to psycho-pedagogical problems in this new educational category. There are growing expectations in research literature for effective web-based learning to not only train in the use of technology, but that such training must be integrated with pedagogical uses of technology that will make it possible to bring about learning for the development of lifelong learning skills and other emerging goals of education that can meet demands of the current information age [3,4]. Reference [3] notes that whenever web technology is used in educational settings, its importance is based on its ability to vitally reflect on its effects on learners, teachers, courses and institutions. Recently, as a result of developments in the economy and demand in the international labour market leveraged by globalization, and even more importantly, the Kenya government's initiative to reduce illiteracy and skills gaps, there have been steadily evolving educational trends in the country [5]. One of the areas where this initiative has special focus is in the adult education sector. This is informed by the fact that many people would like to go back to school and earn coveted post-primary education certificates that, to them, open many opportunities in society for self-development. Such prospective learners who dropped out of school after the primary school level seek several ways to return to school to carry out their studies [6]. Essentially, adults engage in systematic and self-educating activities to acquire new forms of values, attitudes, skills and knowledge [7]. Adult learning, unlike other conventional learning systems, has its own different dynamics and challenges, among these being the availability of learners, time constraints, school-life balance, financing education, confidence and accessibility, among others [8]. These factors make it even more challenging to provide secondary education to adult learners. In the Kenyan education system, similar to several parts of the world, secondary-level education is an important transition requirement to gain admission into tertiary institutions or into formal employment sectors [6]. The demand and constraints of adult learning have necessitated the introduction of web-based learning to improve their access to secondary education. This is meant to mitigate the fact that adult learners are usually hindered by the many responsibilities that people have

in their daily lives, which may hinder the further seeking of learning materials if there are no adult learning centres in the neighbourhood. However, even this is not without its challenges. For example, Reference [8] observes that while the web learning concept has been largely embraced by young learners, adult students are faced with challenges, especially with the perception that they are required to learn on platforms created for younger learners. According to [9], this differential gap creates different expectations when using web-based learning among adult learners in India.

### ***1.2 Problem Statement***

Web-based learning comes with numerous advantages, such as its ability to overcome barriers of physical distance, time and cost. In the long run, this lowers institutional or organizational costs while increasing student enrolment, thereby offering flexibility by allowing access to course information at any time or place. It promotes individualized learning and reaches students who are unable to attend classes in a classroom environment because of time or distance constraints. However, most of the existing models present the adult learners with difficulties, as most of them have to concentrate more on using the technology rather than learning the contents. The difficulties arise in part due to the web learning model configurations in use in the country. The majority lack features and capabilities of highly interactive, fast-paced multimedia-supported learning currently demanded by most learners and tutors. Further, one of the key requirements for adoption of technology is user friendliness, which essentially means the technology is easy to use and maintain, while at the same time supporting several functions and remaining secure enough for the users. Existing research and projects have not addressed web-based learning model problems in the adult secondary education learners context. Therefore, this research sought to develop an improved model for the implementation of web-based learning [10] in adult secondary school education in Kenya.

### ***1.3 Objective of the Study***

To develop an improved model for the implementation of web-based learning in adult secondary school education

## **2. Materials and Methods**

The following approaches were used to carry out the study. First, an existing pedagogical web-based learning system based at one of the leading public universities in Kenya was investigated to examine adult learners' characteristics. Second, a survey targeting four adult learning centres in Nakuru County – and an accessible population of 406 persons comprising 4 administrators, 60 adult educational teachers, and 342 students across the four centres – was conducted to establish the motivational level of the adult students who are carrying their studies through e-learning. From this, a sample size of 11%, or 43 respondents, was derived. The survey, together with system investigation/analysis, were conducted concerning the current status of web-based systems put in place to support learning and to describe what adult learners feel in regard to their motivation and satisfaction in self-directed learning. The data collected from the investigation of the current web learning environment through questionnaires were triangulated. Triangulation enhances the reliability of a research study

by obtaining data from multiple sources and/or employing multiple methods to obtain data [11,12]. The results from the investigation and survey led to the development of a framework describing the principles of adult learners that were incorporated in a model. A web-based learning model was developed from the adult learners' principles and validated.

## **Theory**

### ***2.1 Web-Based Learning***

Web-based education (WBE) is considered to encompass all the processes and aspects of education that apply the Internet as a communication medium and supporting technology. Some definitions of WBE include online education, virtual education, Internet-based education, and education via the computer-mediated communication [7]. From the early 1990s, web-based education has gradually become a very important branch of educational technology. This technology provides learners with access to information and knowledge sources that are practically unlimited, enabling a number of opportunities for personalized learning, tele-learning, distance-learning, and collaboration, with clear advantages of classroom independence and platform independence [13]. Web-based learning would typically come through interaction between a learner and a simulated electronic environment pertaining to the domain of interest to the learner. In this case, the environment is Internet-based; in other variants, it can be Intranet-based, as well as CD-ROM-based. All of these options provide a rich learning experience through interactive use of text, images, audio, video, animations, and simulations. Such environments provide the learners with the ability to log in, allowing users to interact with each other through the Internet. Such interactive sessions may be scheduled regularly as time allows, enabling the learners to walk through the entire course. Within a single session, there is a range for possible collaboration between the learners – from purely individual learning and minimal cooperation with the other learners, to tight collaboration through shared electronic whiteboards and different communication tools. The instructor can monitor the learners' progress in a variety of ways, both disruptive and interactive.

### ***2.2 Some of the Weaknesses of Existing Models of Web-Based Learning***

Considerable growth has been experienced in the use of the web in institutions of higher learning, with various factors influencing the adoption of web-based technology. Different models have presented varying challenges that face this area of education; however, they agree that catering to the needs of a specific learner together, with the challenges associated with helping such learners in the transition process, are issues of interest. This is informed by the fact that there is a shift in focus from teacher-centred to learner-centred education, encouraging educators to provide courses that enable students to manage their own learning. Some of the research work also points to the fact that adult learners tend to miss set deadlines, as they spend more time attempting to understand the underlying principles of how the technology operates, thereby losing their concentration regarding the subject matter. The models concentrate more on a blended education system that combines both the traditional class system and digital/online systems and have not put into consideration the adoption of heutagogy/andragogy, where learning will be self-determined and self-organized by the learners because of the availability factor.

### 3. Results and Discussion

#### 3.1 Results

##### 3.1.1 Existing Web-Based Learning Programme

This study sought to determine from the respondents their views concerning their experience with the existing web-based learning programme for adult secondary school education. A 5 point Likert scale was used to rate responses of this variable and it ranged from; 1 = strongly disagree to 5 = strongly agree. The closer the mean score was to 5, the more the agreement concerning the statement. A score around 2.5 would indicate uncertainty while scores significantly below 2.5 would suggest disagreement regarding the statement posed. The findings are discussed as follows.

**Table 1:** Existing Web-Based Learning Programme

Statements (N = 43)	1	2	3	4	5	Mean	Std Dev.
The online course has an initiation phase, which provides explanation of the content of the course or lesson.	3(7)	7(16)	5(12)	17(40)	11(26)	3.65	0.799
The online course shows learners how to navigate the campus information system and how to acclimate to campus resources.	6(14)	9(21)	4(9)	12(28)	12(28)	3.49	0.925
The learners can communicate directly with the instructor and with each other through the Internet.	7(16)	10(23)	5(12)	13(30)	8(19)	3.56	1.202
The online system we use enables contributing to a discussion.	6(14)	11(26)	14(33)	7(16)	5(12)	3.03	0.925
The online system in our university enables students to respond to a comment.	0	20(47)	5(12)	10(23)	8(19)	2.57	1.046
It facilitates increasing engagement with the course content to allow students to become confident with the system as they advance in their course.	3(7)	5(12)	20(47)	10(23)	5(12)	3.13	1.124
The online system we use facilitates submission of assignments.	11(26)	11(26)	2(5)	10(23)	9(21)	3.18	0.748

The findings in Table 1 suggest that the online course had an initiation phase, as indicated by most of the respondents who agreed (66%). The findings also indicate that a majority (56%) of the respondents agreed that the online resource enables learners to navigate the system's information system and to acclimate to its resources. Looking at the results, it is also evident that most (49%) of the learners were not able to interact

directly with each other and their instructors through the Internet using the application. However, 39% agreed with the statement indicating that the chat feature of the application was available; however, it was either underutilized, or its functions were not fully enabled. It is evident from the results that the system currently in use for adult education in the area allowed the learners to contribute to discussions mostly to a limited extent, as indicated by a majority (33%) of the respondents. However, there were those who felt that the system facilitated discussions among learners to a large extent (28%). The results further indicate that the online system in use in the schools enables students to respond to comments mostly to a small extent, as indicated by a majority (47%) of the respondents; nevertheless, there were others who were able to exploit this feature to a large extent (42%). These findings suggest that there was an active comments feature in the system consistent with the University of Wisconsin Learning Innovation's Model Carter [10] that allowed learners to respond to comments made in the application by other participants [14]. Other findings show that majority (47%) of the respondents felt that the system facilitated increased interaction with the course content and student confidence with the system as they advanced in their course to a limited extent. However, 35% of the respondents agreed that this happened to a large extent, while 18% either felt that this happened to a small extent or did not happen at all. These findings suggest that the system configuration encouraged improved interaction with the course content while increasing the students' confidence with online skills as they progressed with their learning. This finding further shows that the model was substantially derived from the University of Wisconsin Learning Innovation's Model [10]. Looking at the findings, it is also evident that the online system did not facilitate easy submission of assignments, as indicated by the majority (52%) who agreed, the 44% who disagreed, and the 5% who were unsure about this feature. This shows that the system had not fully enabled the University of Wisconsin Learning Innovation's Model [10] online submission of assignments function [14]. These findings were consistent with the application of Nguyen's [15] Three Phases Navigational Model [10], which is ideal for learning resource navigation. It is also consistent with Lohr's [16] Embedded Teacher (ET) Model [10], which has navigational assistance embedded into the model. This finding agrees with Peters and Robert [2], who stated that some web learning models provide the learners with the ability to log in and interact directly with their instructors and other learners through the Internet. Reference [5], however, pointed out that these systems are not very functional if there are no proper pre-arrangements to set up communication of materials through the existing systems. Peters and Robert (2) had recommended the need for web learning models to provide the learners with the ability to log in and interact directly with their instructors and other learners through the Internet.

### ***3.1.2 Improvement of the Web-Based Model for Learning***

This study also sought to identify some of the improvements needed for the existing web learning model. The results are summarized in Table 2.

It is evident from the findings in Table 2 that most respondents (71%) felt that the time required to familiarize themselves with the system needed to be considerably reduced. Most of them also felt that the system could improve if it could accommodate several users and allow them to interact well in real time (89%). Other tasks for the system recommended by a majority (68%) were that it facilitates the sharing of processed files offline, such as assignments and other processed data.

**Table 2:** Necessary Adjustments for the Web Learning Model

<b>Statements (N = 43)</b>	<b>Agree (%)</b>	<b>Disagree (%)</b>
The is a need to reduce the time required for system familiarization	71	29
The system needs to accommodate several users and allow them to interact well in real time	89	11
It is important to share our processed files offline, such as assignments and other processed data	68	32
The system should allow for increased multimedia support	78	22
The system needs enhanced navigation features to make it easier to navigate	56	44
The system needs to enable users to organize a virtual class with all the necessary features	75	25

The system also needed to increase multimedia support, as some tasks could only be executed on a multimedia platform (78%). A majority (56%) also indicated that the system needs enhanced navigation features to make it easier to navigate. In addition, most of the respondents agreed that the system needs to enable users to organize a virtual class with all the necessary features (75%). These findings reflect the requirements of Nguyen’s (15) Three Phases Navigational Model and Lohr’s (16) Embedded Teacher (ET) Model for learning resource navigation. Both models stipulated that a navigational assistance feature be embedded into the model for faster access to the systems learning features.

### 3.2 Development of the Web Learning Model

#### 3.2.1 Emerging Issues in the Web Learning Model in Use for Adult Learners

From the results and discussion presented in the previous chapter, several issues emerged that needed to be factored into the design of the new web learning model. These issues and their relative scores are presented in Table 3.

**Table 3:** Issues Emerging from the Web-Based Learning Model in Use

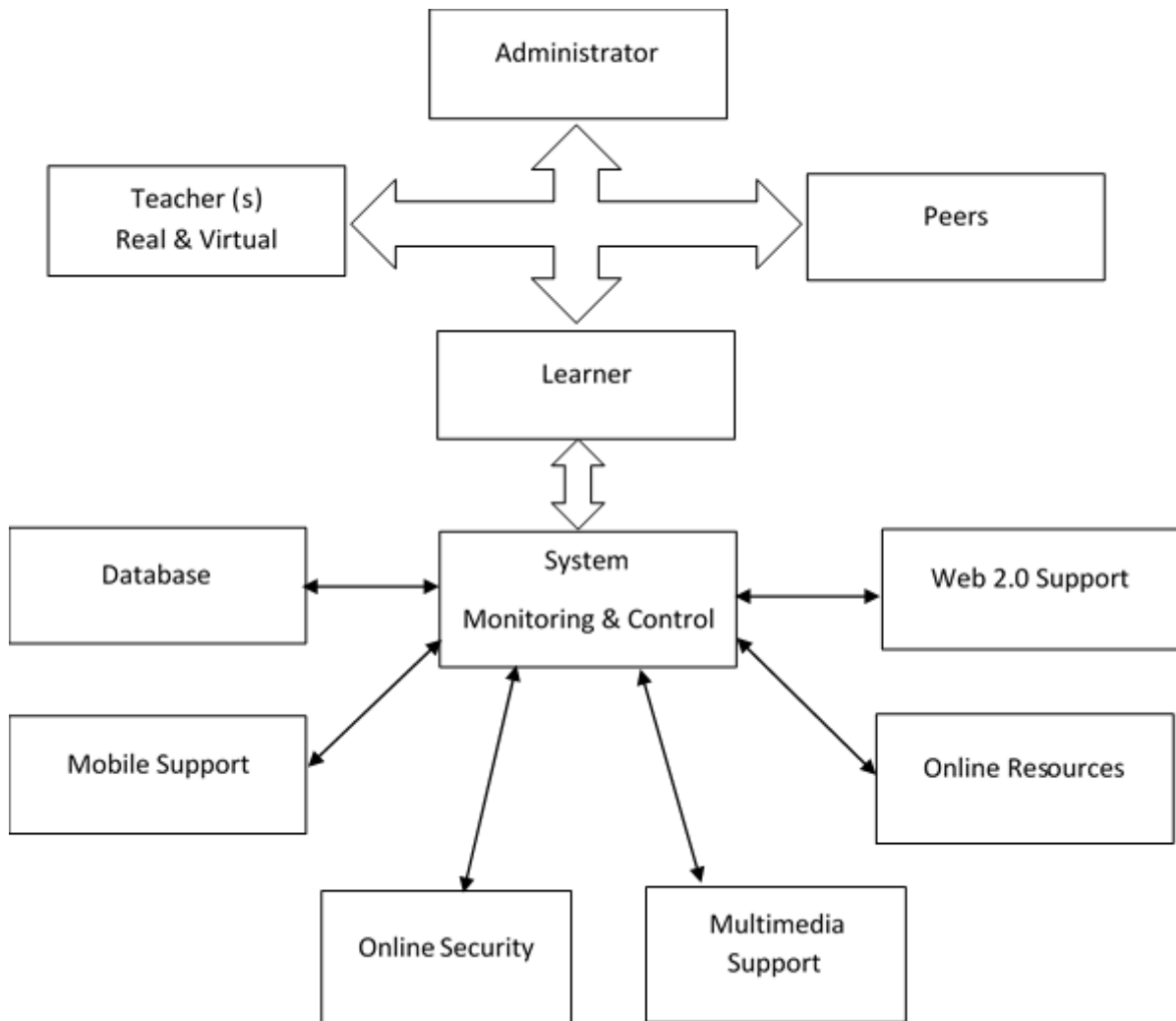
<b>Response</b>	<b>Percentage (%)</b>	<b>Mean</b>
Orientation	44	2.51
Providing navigational assistance	56	3.44
Providing instructional strategies & initiation	66	3.56
Providing interactive feedback	49	2.96
Reflection	50	3.33
Confidence with system	56	3.41
Instructors' presence	47	3.05
Clarity in learning activities	18	1.99
User professional and personal experience	36	2.23
Relating content to reality simulation	43	2.51
Increased collaboration	42	2.49

As seen from Table 3, most constructs were rated negatively (below mean = 3.05), meaning that the web-based learning model needed to be improved. Therefore, all the constructs rated below this mean value were given more emphasis when designing the new model. However, for the model to be robust and to address the learning and interaction needs of the users, the constructs with mean values higher than 3.05 were also incorporated to strengthen the proposed model in Figure 1.

**3.2.2 Proposed Web-Based Learning Model for Secondary School Adult Learners**

It was imperative that models developed for web-based learning be well designed with the learner at the centre to enable him/her to maximize the web resources available. In the present model, the learner’s needs were emphasized

by first examination data on web learning assuage and challenges experienced by the learner



**Figure 1:** Proposed Web-Based Learning Model for Secondary School Adult Learners



### 3.3 Framework Validation

A qualitative approach employing questionnaires and interviews was used to validate the findings of this study. Face-to-face semi-structured interviews were carried out with five instructors working in the adult education department in Nakuru County. Each interview took between 30 minutes and 1 hour.

**Table 4:** Model Validation Results for the Proposed Web-Based Learning Model

Issue	Mean	Std. Dev
The time required to familiarize oneself with the system has been considerably reduced	3.66	0.576
The system can accommodate several users and can allow them to interact well in real time	3.58	0.83
It is now possible to share our files processed offline, such as assignments and other processed data	3.39	0.748
The system now allows for increased multimedia support	3.74	0.799
The system has enhanced navigation features, making it easier to navigate	4.12	0.925
It is now possible to organize a virtual class with all the necessary features	3.51	0.805
<b>Average</b>	<b>3.67</b>	<b>0.781</b>

From the findings in Table 4, it can be deduced that the proposed framework will considerably reduce the time required to familiarize with the system when fully implemented as indicated by the majority (76%) of the respondents who agreed. In addition, the proposed framework can, when fully implemented, accommodate several users and allow them to interact well in real time (69%). The validation results also indicate that there was a considerable improvement in the file sharing capability of the system, with most respondents (55%) agreeing that the proposed framework will enhance the possibility of sharing files processed offline, such as assignments and other processed data. Further, through the new framework, the majority (81%) of the respondents expected increased multimedia support. Most (92%) of the respondents expected the proposed framework to have enhanced navigation features, making it easier to navigate the system. Last, most of the respondents (61%) agreed that with the improvements, the proposed framework will now make it possible to organize a virtual class with all the necessary features as recommended by Peters and Robert (2). The study, thus, used the validation results to check for improvements derived from the theories of online learning and summarized the results in Table 5.

The results in Table 5 suggest that there was high confidence in the proposed framework by the stakeholders; as such, it can be further improved at the implementation phase to optimize its features and applicability. These results, however, could not in themselves predict the likelihood that the respondents would use the new framework. Therefore, the study resorted to a Binary Logistic regression analysis to predict the behavioural intention of the respondents on working with the new framework – that is, the probability that a respondent would likely report to have used the new framework in the future.

**Table 5:** Model Validation Results for the Proposed Web-Based Learning Model

<b>Response</b>	<b>Percentage (%)</b>	<b>Mean</b>
Orientation	62	3.51
Providing navigational assistance	66	3.56
Providing instructional strategies & initiation	69	3.63
Providing interactive feedback	71	3.66
Reflection	59	3.49
Confidence with system	75	3.71
Instructors' presence	67	3.56
Clarity in learning activities	56	3.44
User professional and personal experience	55	3.43
Relating content to reality simulation	76	3.71
Increased collaboration	70	3.66

The dependent variable for this study was intention to use the new web-based learning model, which was measured using the binary (Yes/no) logit in response to the statement relating to the intention to use the improved model. As its predictor variables, the study used perceived ease of use, understandability, perceived usefulness, effectiveness, reliability, cost implications, portability, adaptability, reparability, security and system confidence. The logit function used was meant to predict the natural log of the odds of using or failing to use the improved model in the near future, which were assigned the logit values yes = 1 and no = 0, respectively. The results are presented in Table 6.

**Table 6:** Beginning Block

		Predicted			
		Will use New Framework		Percentage	
Observed		0	1	Correct	
Step 0	Will use New Framework	0	33	0.	
		1	10	100.0	
	Overall Percentage			44.4	

The results in Table 6 show the output for a model that includes only the intercept. The base rates for the binary question responses (Yes =1 and No = 0) suggest that 44.4% of the respondents intended to use the proposed new framework, while the intentions of 55.6% could not be explained by the model, as there were no predictor variables. Therefore, the study predicts for every case that the respondent will report using the proposed new framework with an accuracy of 44.4% all the time. Therefore, the model was tested on the probability of the outcome without the response variables, as shown in Table 7.

**Table 7:** Predictor Variables Not in the Equation

			Score	Df	Sig.
Step 0	Variables	Orientation	37.517	1	0
		Navigational assistance	39.711	1	0
		Instructional strategies & initiation	33.456	1	0
		Interactive feedback	31.223	1	0
		Reflection	30.114	1	0
		Confidence with system	31.232	1	0
		Instructors' presence	35.402	1	0
		Clarity in learning activities	33.899	1	0
		User professional and personal experience	34.675	1	0
		Relating content to reality simulation	37.017	1	0
		Increased collaboration	36.32	1	0
<b>Aggregate</b>			<b>34.598</b>	<b>11</b>	<b>0.000</b>

Looking at the Block 1 output, it is evident that removing navigational assistance would have the greatest effect on user behavioural intention to use the framework (Score = 39.711). Others closely following are orientation (Score = 37.517), relating content to reality through simulation (Score = 37.017) and increased collaboration (Score = 36.320). This means that the absence of these predictors would have a significant bearing on the acceptability of the system. This was confirmed through Omnibus Tests of Model Coefficients, shown in Table 8, which gave a Chi-Square of 51.122 on 10 d.f., which was significant ( $p \leq .05$ ). Consequently, the null hypothesis that adding the independent variables to the model would not significantly increase its ability to predict the intentions of respondents on their future use of the system was invalidated.

**Table 8:** Block 1- Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	51.122	10	0.000
	Block	51.122	10	0.000
	Model	51.122	10	0.000

To further ascertain the quality of the behavioural intentions of the respondents, the -2 Log Likelihood statistic was used. This statistic measures how poorly the model predicts the decisions; the smaller the statistic, the better the model. Further, the Cox & Snell  $R^2$  can be interpreted as an  $R^2$  in a multiple regression, but it cannot reach a maximum value of 1. The results are given in the Model Summary in Table 9.

**Table 9:** Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	138.331	0.667	0.780

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001. The model summary in Table 9 yielded a -2 log likelihood statistic of 138.331 and a Cox & Snell  $R^2$  of 0.667, which implies that the probability of using the improved model among the users was 66.7%. Similarly, the Nagelkerke  $R^2$  of 0.780 also indicates that 78% of the dependent variables can be explained by the predictors in the model.

### **3.4 Discussion**

#### **3.4.1 Existing Web-Based Learning Programmes**

The findings for the existing model used for web-based learning for adult secondary school education indicate that the model was only partly meeting the learning needs of the students, which could be attributed to system design shortfalls and students' aptitude for web-based learning that allowed them to fully use its features. There was a need to enrich the learning experience through interactive use of text, images, audio, video, animations, and simulations. Learners also needed to be able to log in and interact with other learners and with their instructors directly online through chat applications. It can be further deduced from the findings that the system could improve if it could accommodate several users and allow them to interact well in real time, as indicated by most of the respondents who agreed. This means that the social aspect of the system was regarded as most important by the users since learning and information sharing needed to go beyond the classroom. This finding agrees with Yakaboski and Nolan [6], who found that learning is best modelled by conversational interactions between students and their teachers. At the heart of a model is an iterative process of dialogue in which both student and teacher describe their conceptions of the focal issue or topic, and the teacher responds to the student's input adaptively in accordance with perceived need. At the heart of a model is an iterative process of dialogue in which both student and teacher describe their conceptions of the focal issue or topic, and the teacher responds to the student's input adaptively in accordance with perceived need.

#### **3.4.2 Requirements for an Improved Web-Based Learning model**

The study findings on requirements for successful development of an improved model from the user's point of view suggest that user interaction capabilities was the most important success factor for the web-based model design because the web-based application was regarded as a social tool for learning [6]. Navigational features, processed data sharing and orientation time for the system were also rated highly. However, multimedia support (68.4%) and organizing a virtual class (65.1%) were rated lower than the rest. The average mean of 3.815 was high, indicating that all the constructs were important and needed to be considered when designing the new model. The constructs that were used in coming up with the improved web-based learning model included orientation, initiation, navigational assistance, instructional strategies, providing interactive feedback, reflection, user confidence with system and instructors' presence. Others included providing clarity in learning activities, improving professional and personal experience of users, relating content with reality through simulation, and improving collaboration. All of these factors contributed significantly to users' behavioural intention. These results were further used to enrich the proposed model.

#### **4. Conclusions**

While conducting this research, the main objective was to devise an improved web learning model for implementation in adult secondary school education in Kenya and, therefore, to emphasize those factors that can spur the uptake of this technology among adult learners within the country. It was within this context that an improved web-based learning model was developed that can accelerate the adoption of this technology among Kenyans if all the stakeholders play their roles effectively, as discussed below. Factors that hinder the model's implementation in the country's adult education system were also clearly revealed, and recommendations have been made on how to handle these challenges. With this in mind, a comprehensive analysis of the results was performed and discussed as follows. After analysing the existing models and establishing their operational challenges, an improved model was proposed. The proposed model was statistically tested using sample data. A binary logistic approach was performed. Analyses were performed in two major steps. The first step was descriptive and was conducted to assess the agreement of the respondents with the various factors that were considered to influence the implementation of web-based learning in adult secondary education. The second step involved testing the users' behavioural intention to use the improved model. The results showed that recognizing both technological and user attributes along the recognized theoretical frameworks were important in increasing the users' behavioural inclination to use the improved model.

#### **5. Recommendations**

The followings are recommended for future research work:

- i. The adult education department in the Ministry of Education should carry out sensitizations on the importance of Web Based Learning Models among adult learners.
- ii. The adult education department in the Ministry of Education should facilitate training workshops to adult educators on the pedagogy of Web Based Learning Models so as to increase the acceptance rates of the technologies
- iii. System developers could also find ways of incorporating additional features into the model without affecting its architecture and function. Towards this end, the developers can come up with additional learning resources and also integrate the model to other learning models.
- iv. There is also need for future studies on the causal antecedents of the constructs presented in this research model to provide more precise practical implications. Another study can be done to investigate why the variables have considerable effect on the intention to use Web Based Learning.

#### **6. Research Limitations**

This research study was limited to the population of the study. It was carried out in Nakuru County with only a few adult learning centers. This dictates that duplication of the recommendations of the study be carried out with a lot of caution. There was limitation in the resources including financial resources required for the study but this was overcome by the researcher using her own resources to complete the same. Another challenge experienced was copyright issues and obtaining data for the particular schools which offer adult education

where the research was conducted. This was overcome by the researcher assuring the respondents that the information collected was purely for academic purposes and strict confidentiality would be maintained.

## **7. Declaration of Interest**

Declarations of interest: none

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