

A Computer Program for Estimating the Relative Weights of Subjects and building Study plans in the General Education Stages in the Member States of the Arab Bureau of Education for the Gulf States

(User Guide)

Developing a computer program to estimate the relative weights of subjects in the general education stages in the Member States of the Arab Bureau of Education for the Gulf States represents one of the most important components of the proposed vision for the relative weights of subjects and the construction of study plans in these countries. This initiative aims to achieve one of the specific objectives of the reference guide for the relative weights of subjects in the general education stages in the member states, which is to provide a suitable computer tool to assist users in estimating these weights.

The Need for the Program:

The need to design this computer program arose from several key justifications. Most notably, it is due to the multiple functions it can perform and the data it can provide to decision makers in the areas of planning curricula, and reviewing study plans. Furthermore, considering this program as a recent version or an update to the computer tool previously developed in 2006 by the Gulf Arab States Educational Research Center (GASERC), the current state of subjects in the various stages of general education in member states, and the changes it has undergone due to the influence of various factors, necessitate the development of this tool and the production of a new computer program. This program should not only rely on data from this current reality but also strive to improve it and enhance its responsiveness to the rapid changes occurring in all fields, particularly in the amount of human knowledge and the evolution of its organization.

Program Objectives and Importance:

The objective of This computer program is to serve those concerned with the relative weights of subjects and the development of curricula in member states. This includes policymakers, specialists in planning, evaluating and developing curricula, teachers, and educational supervisors of various

specializations and experiences. The program aims to assist these target groups in understanding the current state of the relative weights of subjects and study plans in these countries, estimating and re-estimating the appropriate time for teaching each subject, and comparing the allocated time for each. Additionally, the program seeks to provide assistance and guidance in reviewing, evaluating, and developing study plans based on the results of increasing or decreasing the teaching time for certain subjects or adding or removing one or more subjects.

Specifically, it can be said that the importance of the current computer program lies in its ability to assist its intended users in the following:

- Recognizing the current distribution of relative weights of subjects and study plans in grades (1–6) and grades (7–9) across member states (**The program’s awareness-raising role.**)
- Comparing the allocated teaching time for subjects from various perspectives, such as subject type, educational stage, and country.
- Developing skills to estimate the relative weights of subjects by providing opportunities for self-training (**The program's educational role**).
- Tracking the results of potential interventions or changes in the allocation of teaching time, such as increasing or decreasing teaching hours, introducing new subjects or free activities, or removing one or more subjects.
- Reviewing and proposing alternative study plans in response to changes in the relative weights of subjects (**The program's practical role**).
- Planning to address the implications or consequences of changes in relative weights of subjects, including curriculum and textbook development, teacher training, and professional development (**The program's role in readiness and preparation**).

It is noted that the program's roles are diverse, encompassing awareness, education, application, and preparedness.

Data and Information Required for Program Development:

The preparation for designing the computer program, as a starting point, required the study and analysis of the tool for estimating the relative weights of subjects and its usage guide. This tool was developed in 2006 as part of the Relative Weight of Subjects Program initiated by GASERC. The goal was to identify the potential offered by the tool, its functions, and subsequently define the objectives and framework of the new computer program.

Defining the program's objectives and framework led to determining its potential functions, which required a diverse range of input data and information, including:

- The study plans for general education in grades (1–9) in member states for the academic year 2023/2024.
- The annual teaching hours and their relative weight for each subject in grades (1–9) in member states for the academic year 2023/2024.
- Assessment criteria for the current relative weights of subjects and study plans in member states.

It is worth noting that all the aforementioned data and information are available in the study prepared by GASERC to evaluate the relative weights of subjects in general education stages in member states.

Program Design:

The computer program was developed using **Excel** and **Visual Basic**, then transformed into a web-based platform. It helps manage and distribute teaching hours across various subjects and academic years, modify existing study plans, and add or remove subjects according to educational needs.

The program's dashboard includes three interactive tables that users can work with:

- **Main Table:** Displays the teaching hours allocated to each subject.
- **Under Planning Table:** Allows users to modify, add, or remove subjects.

- **Change Table:** Highlights the changes made in the "Under Planning" table compared to the "Main table," and also identifies **anomalies** or inconsistencies in the distribution of teaching hours.

Skills Required to Use the Program:

Effective use of the program requires the following concepts and skills:

- **Concepts related to the use of the program:** Understanding the functions of tables and buttons.
- **Concepts related to preparing study plans:** Understanding of time allocation across subjects and academic years.
- **Basic computer skills:** Ability to use web browsers and online forms.
- **Problem-solving skills:** Capability to manage and resolve anomalies before saving the modified tables.

Program Functions:

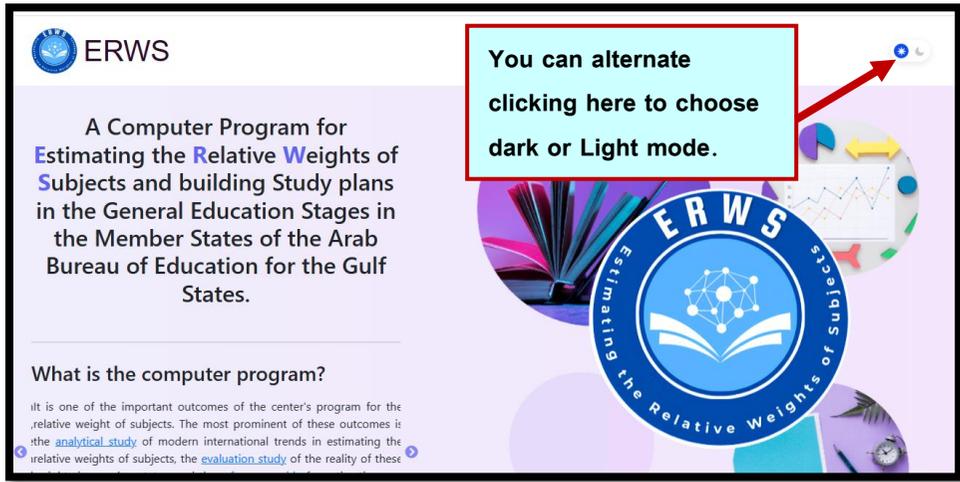
The program offers the following functionalities:

- **Displaying data:** Displaying data on the length of the academic year, class time per minute, the corresponding class time in hours during the academic year, and the number of annual teaching hours for each subject, in grades (1-9) in each member state.
- **Increasing/decreasing the number of teaching hours for subjects:** The user can increase or decrease the number of hours allocated for teaching subjects.
- **Adding/removing subjects:** The user can add new subjects to under planning table or remove scheduled subjects.
- **Managing anomalies:** The user can adjust all anomalies resulting from increasing or decreasing the number of teaching hours, or adding or removing subjects, in light of the assessment criteria for relative weights of subjects.
- **Comparison between subjects:** comparison between subjects by grade and by country.
- **Printing:** The user can print the modified tables for reference when needed.

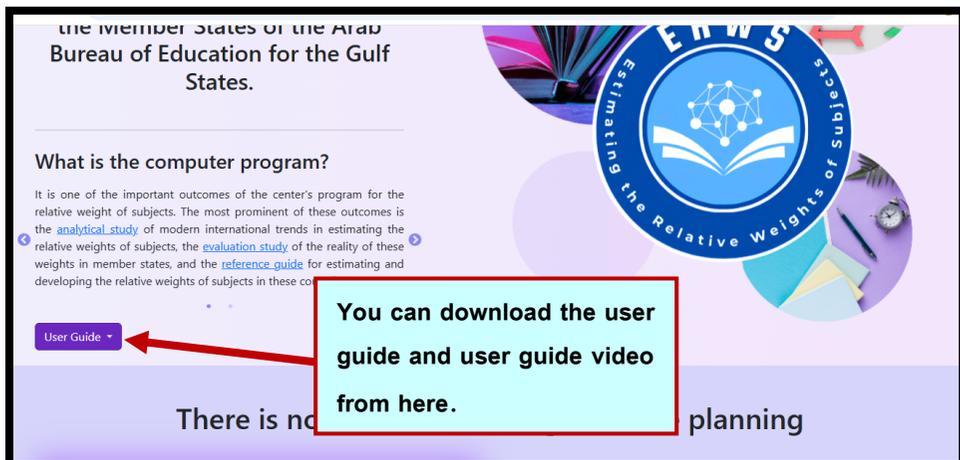
Program Usage:

- Program User Interface:

- When you click on the program's link, you will be taken directly to its user interface.
- You can switch between Dark Mode and Light Mode.

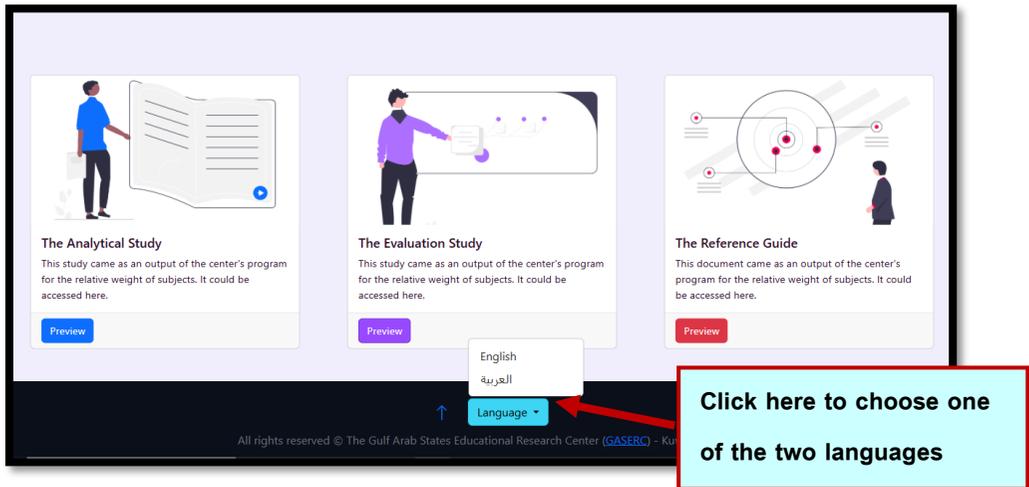


- You can download the program's user guide in Arabic or English, as well as the program's usage video, by clicking on "User Guide".



-Select the Language of Use:

- Select the language you want to use: Arabic by clicking "Arabic", or English by clicking "English".
- You can switch between the two languages while using the program by clicking on one of them.

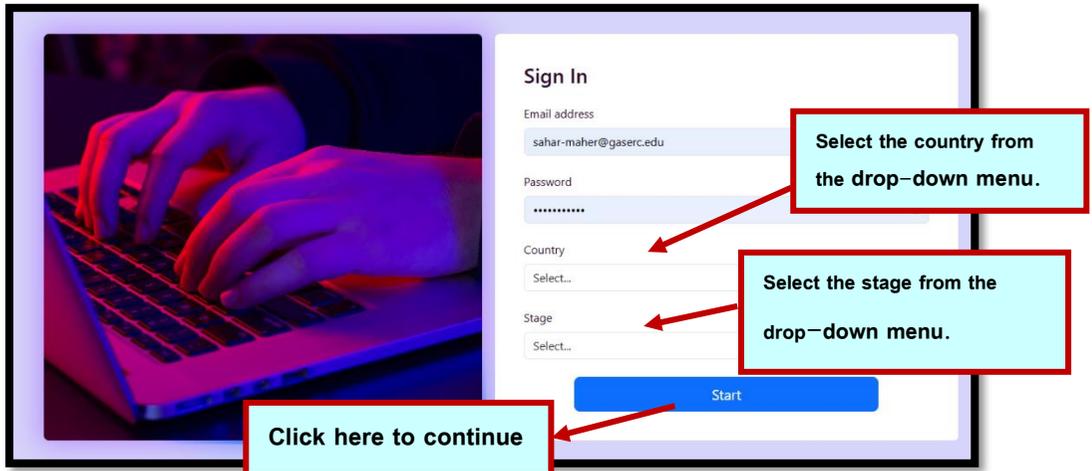


- You can also - as in the previous figure - preview the three program's outputs: the analytical study, the evaluation study, and the reference guide, by clicking on the button for each output.

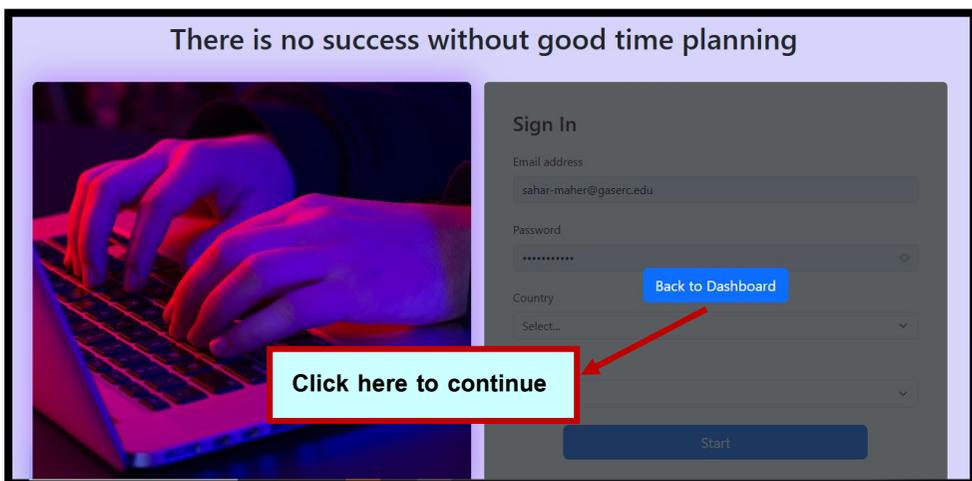
- Log in

- Enter your email address and password.
- Select your target country from the drop-down menu.
- Select your target stage (elementary/middle) from the drop-down menu.

- Click "Start" to access the data for your selected country.



- Note that when you enter the program for the second time, you can enter directly without having to register your data again, by clicking on "Back to dashboard".



- From the Main table you can recognize the data of the relative weights of subjects, in the country and stage you choose.

Bahrain 

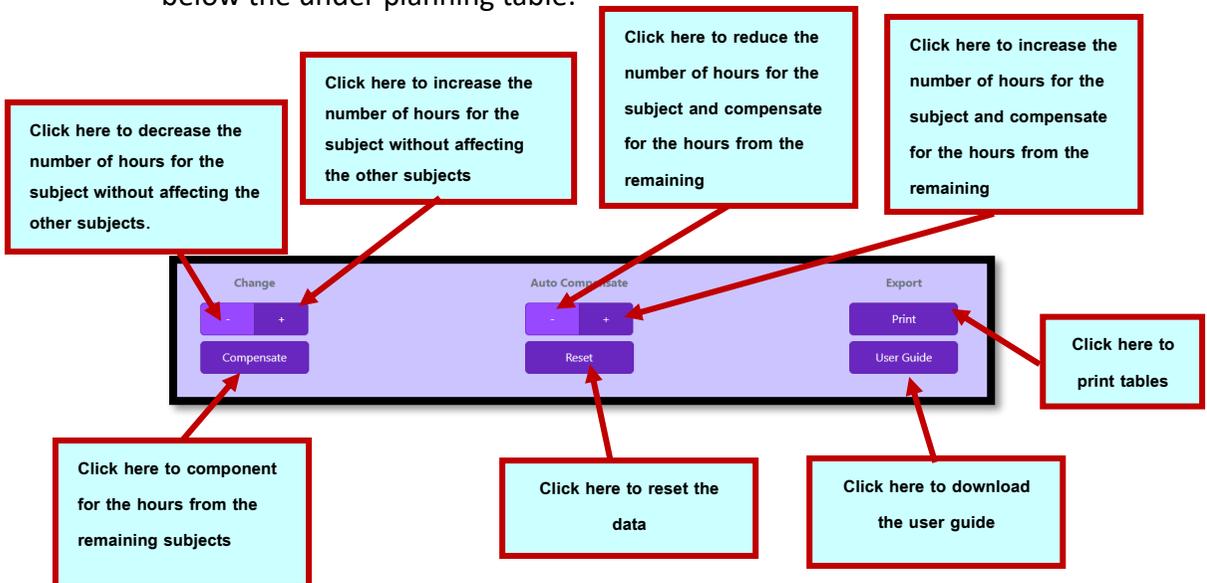
Timing

number of Weeks	38
Class Time (min)	45
hours / year	29

Main

Grade	1	2	3	4	5	6	Tot	%
Arabic Language	171	171	171	171	171	171	1026	13%
English Language	143	143	143	143	143	143	858	11%
Mathematics	171	171	171	171	171	171	1026	13%

- Notice that the dashboard contains three tables: main table, under planning table; where you can edit to get a future table that could be used, and changes table where the changes you made appear as well as the anomalies.
- Also note the different usage for the buttons in the control panel below the under planning table.



The control panel consists of three main sections: Change, Auto Compensate, and Export.

- Change:** Contains minus (-) and plus (+) buttons for adjusting hours, and a Compensate button.
 - Click here to decrease the number of hours for the subject without affecting the other subjects.
 - Click here to increase the number of hours for the subject without affecting the other subjects.
 - Click here to component for the hours from the remaining subjects
- Auto Compensate:** Contains minus (-) and plus (+) buttons for adjusting hours, and a Reset button.
 - Click here to reduce the number of hours for the subject and compensate for the hours from the remaining
 - Click here to increase the number of hours for the subject and compensate for the hours from the remaining
 - Click here to reset the data
- Export:** Contains Print and User Guide buttons.
 - Click here to print tables
 - Click here to download the user guide

– **Modify Annual Teaching Hours for Subject**

- Go to the under planning table to start editing and to see the effect of the changes.

Under Planning Add subject Remove Subject ?

Subject \ Grade	Grade						Tot	%
	1	2	3	4	5	6		
Arabic Language	171	171	171	171	171	171	1026	20%
English Language	143	143	143	143	143	143	858	17%
Mathematics	171	171	171	171	171	171	1026	20%
Science	86	86	86	86	86	86	516	10%
Social Studies	0	0	0	29	29	29	87	2%
Islamic Education	57	57	57	57	57	57	342	7%
Physical Education	57	57	57	57	57	57	342	7%
Music/Art Education	57	57	57	57	57	57	342	7%

- Choose the grade and subject that you want to modify.

Under Planning Add subject Remove Subject ?

Subject \ Grade	Grade						Tot	%
	1	2	3	4	5	6		
Arabic Language	171	171	171	171	171	171	1026	20%
English Language	143	143	143	143	143	143	858	17%
Mathematics	171	171	171	171	171	171	1026	20%
Science	86	86	86	86	86	86	516	10%
Social Studies	0	0	0	29	29	29	87	2%
Islamic Education	57	57	57	57	57	57	342	7%
Physical Education	57	57	57	57	57	57	342	7%
Music/Art Education	57	57	57	57	57	57	342	7%
Information Technology / Design and Technology / (Family Education (Life Skills))	57	57	57	57	57	57	342	7%

- Use (+) button in the control panel to increase the annual teaching hours and (-) to decrease it.

- Notice the subject cell that you modify regarding the limits of the relative weights, searching for exceeding the maximum and minimum limits according to the assessment criteria for relative weights of subjects
- Warnings show up when you approach or reach criteria.
- A first warning shows up as a faded color on the subject cell when approaching the criteria (red when reaching the maximum limit, yellow when reaching the minimum limit).
- On reaching the limit a red warning shows on top of the page.

English Language	14	⚠ This is the minimum hours for this subject			43	143	858	17%
Mathematics	171	26	171	171	171	171	881	18%
Science	86	86	86	86	86	86	516	10%
Social Studies	0	0	0	29	29	29	87	2%
Islamic Education	57	57	57	57	57	57	342	7%
Physical Education	57	57	57	57	57	57	342	7%
Music/Art Education	57	57	57	57	57	57	342	7%
Information Technology / Design and Technology / (Family Education (Life Skills))	57	57	57	57	57	57	342	7%
Recitation	29	29	29	0	0	0	87	2%
Citizenship Education	29	29	29	29	29	29	174	3%
Total Instruct Time	855	855	855	855	855	855	5130	100%

English Language	14	⚠ This is the maximum hours for this subject			43	143	858	17%
Mathematics	171	229	171	171	171	171	1084	21%
Science	86	86	86	86	86	86	516	10%
Social Studies	0	0	0	29	29	29	87	2%
Islamic Education	57	57	57	57	57	57	342	7%
Physical Education	57	57	57	57	57	57	342	7%
Music/Art Education	57	57	57	57	57	57	342	7%
Information Technology / Design and Technology / (Family Education (Life Skills))	57	57	57	57	57	57	342	7%
Recitation	29	29	29	0	0	0	87	2%
Citizenship Education	29	29	29	29	29	29	174	3%
Total Instruct Time	855	855	855	855	855	855	5130	100%

– **Adding a New Subject:**

- Click on “Add subject” button.

Under Planning

Add subject Remove Subject ?

Grade \ Subject	1	2	3	4	5	6	Tot	%
Arabic Language	171	171						20%
English Language	143	143					858	17%
Mathematics	171	171	171	171	171	171	1026	20%
Science	86	86	86	86	86	86	516	10%
Social Studies	0	0	0	29	29	29	87	2%
Islamic Education	57	57	57	57	57	57	342	7%
Physical Education	57	57	57	57	57	57	342	7%
Music/Art Education	57	57	57	57	57	57	342	7%
Information Technology / Design and Technology / (Family Education (Life Skills))	57	57	57	57	57	57	342	7%

Click here to add Subject

- Enter the subject name you want to insert and specify the number of its initial teaching hours, and its relative weight.

Under Planning

Add subject Remove Subject ?

New Subject ✕

Subject Name:

Subject English Name Subject Arabic Name

Subject weekly classes for grades 1-9:

Grade 1 Grade 2 Grade 3

Grade 4 Grade 5 Grade 6

Grade 7 Grade 8 Grade 9

Subject Ratio-Weights:

Minimum Maximum Ratio-Weight

Close Add Subject

Grade	6	Tot	%
Arabic Language	171	1026	20%
English Language	143	858	17%
Mathematics	171	1026	20%
Science	86	516	10%
Social Studies	29	87	2%
Islamic Education	57	342	7%
Physical Education	57	342	7%
Music/Art Education	57	342	7%
Information Technology / Design and Technology / (Family Education (Life Skills))	57	342	7%

This form appears when you click on add Subject.

- Adjust the teaching hours of added subject using the (+) or (–) buttons on demand.

- Check the teaching hours balance in the changes table.
- **Removing a Subject:**
 - Choose the subject you want to remove from the under planning table.
 - Click on “Remove Subject” button to remove the subject.

Under Planning

[Add subject](#)
[Remove Subject ?](#)

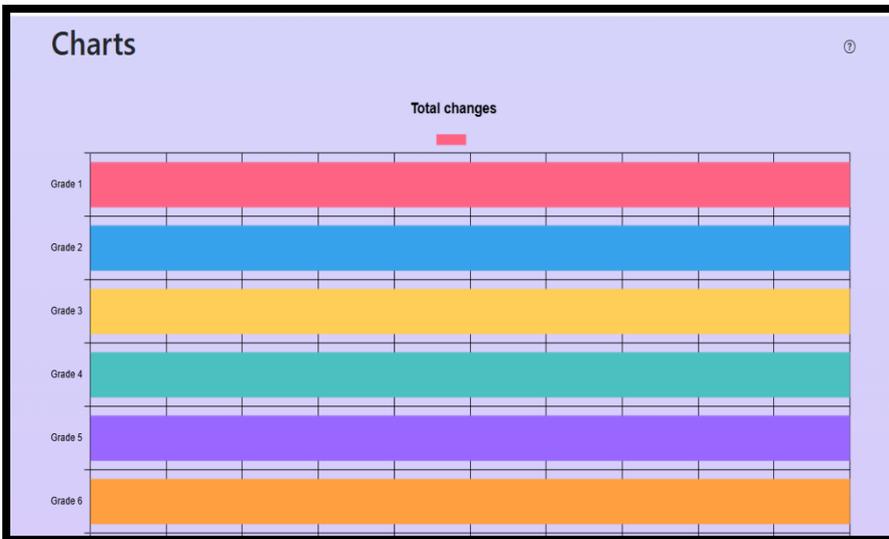
Grade \ Subject	1	2	3	4	5	6	Tot	%
Arabic Language	171	171	171	171	171	171	1026	20%
English Language	143	143	143	143	143	143	858	16%
Mathematics	171	171	171	171	171	171	1026	20%
Science	86	86	86	86	86	86	516	10%
Social Studies	0	0	0	29	29	29	87	2%
Islamic Education	57	57	57	57	57	57	342	7%
Physical Education	57	57	57	57	57	57	342	7%
Music/Art Education	57	57	57	57	57	57	342	7%
Information Technology / Design and Technology / (Family Education (Life Skills))	57	57	57	57	57	57	342	7%

Click here to Remove Subject

- Ensure that removing this subject does not hit any limits and compensate the shortage.
- **Anomalies Compensation**
 - Anomalies may appear in the changes table on modifying the teaching hours.
 - Monitor the charts and the tables to analyze the changes.
 - Choose other subjects to balance the number of teaching hours by increasing or decreasing them until the anomalies become zero.

Changes ?

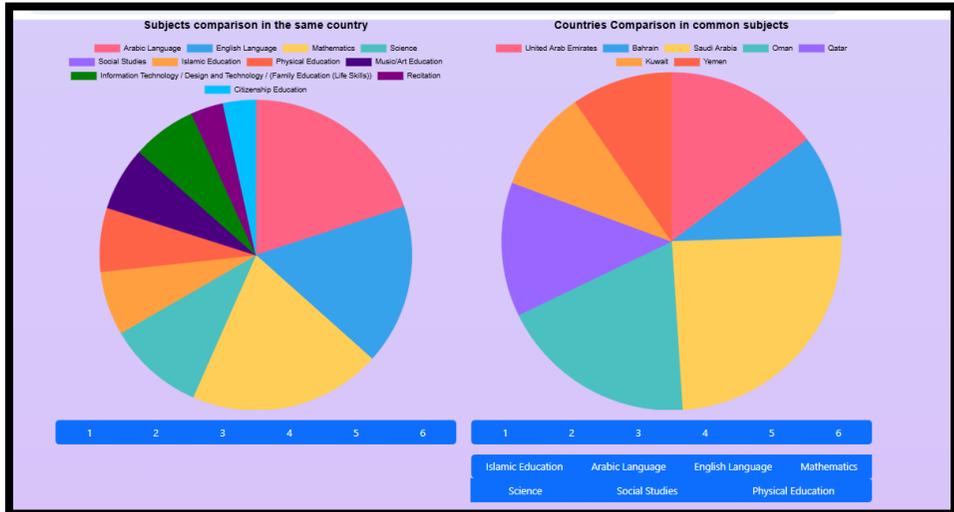
Grade \ Subject	1	2	3	4	5	6	Tot
Arabic Language	0	0	0	0	0	0	0
English Language	0	0	0	0	0	0	0
Mathematics	0	0	0	0	0	0	0
Science	0	0	0	0	0	0	0
Social Studies	0	0	0	0	0	0	0
Islamic Education	0	0	0	0	0	0	0
Physical Education	0	0	0	0	0	0	0
Music/Art Education	0	0	0	0	0	0	0
Information Technology / Design and Technology /	0	0	0	0	0	0	0



– **Changes Charts, and Subjects Comparison:**

- You can compare subjects' teaching hours in each grade by clicking on the grade number under the chart.
- Note the changes in each subject, whether they are an increase or a decrease.

- You can also compare the number of teaching hours for common subjects between member states by selecting the target subject by clicking on its name below the chart.



- Finishing the Teaching Hours Table and Printing:**
- Upon solving all the changes, you can print the modified table by click on the “print” button.
- Use the program again and choose another grade, and/ or a new country by click on the “change country or stage” button.

ERWS Home Logout

Welcome Admin, to Dashboard
Bahrain

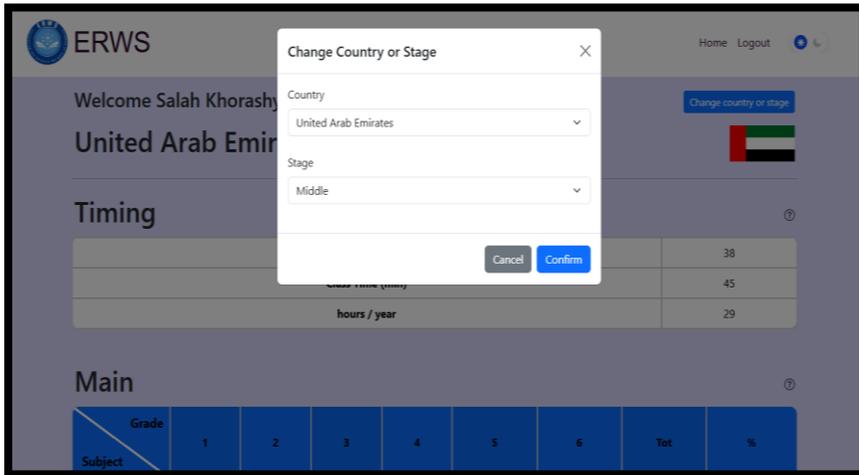
Timing ⓘ

number of Weeks	38
Class Time (min)	45
hours / year	29

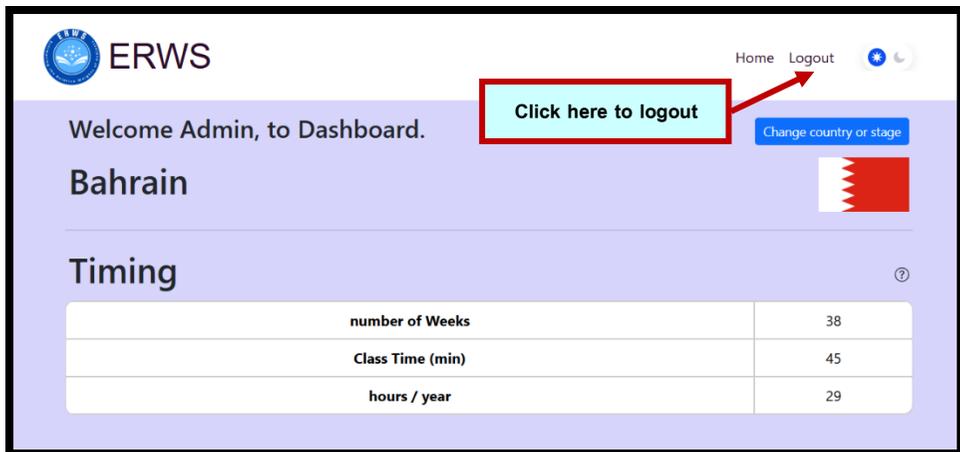
Click here to choose another country and/ or another stage

Change country or stage

- After clicking on the “change country or stage” button, a window will appear, as shown in the following figure:



- After finishing you can log out of the program by click on the “logout” button.



– **Notes:**

- The user manual is providing in both Arabic and English, with a short video to show how to use the program.

- Successful use of the program requires careful study of its user guide.
- To keep the results in the changes table, you must ensure that the final modified teaching hours table is printed.
- For the data in the main table notice that:
 - Teaching hours are approximated to the nearest integer; so it might not always match the actual total.
 - Teaching hours of Science in the ninth grade in Oman is the summation of Physics, Chemistry and Biology.