THE EFFECT OF AL ANDALUS IMPROVEMENT MODEL ON THE TEACHERS PERFORMANCE AND THEIR HIGH SCHOOL STUDENTS' SKILLS ACQUIRING

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Abstract

The study was carried out in the High School Classes of Andalus Private Schools, boys section, using control and experimental groups that were randomly assigned. The study investigated the effect of Al-Andalus Improvement Model (AIM) on the development of students' skills acquiring. The society of the study composed of Al-Andalus Private Schools, high school students, boys Section (N=700), while the sample of the study composed of four randomly assigned groups two groups of teachers (N=16) and two groups of students (N=42) with one experimental group and one control group for teachers and their students respectively. The study followed the quantitative and qualitative approaches in collecting and analyzing data to investigate the study hypotheses. Results of the study revealed that there were significant statistical differences in teachers' performances and students' skills acquiring for the favor of the experimental groups and there was a strong correlation between the teachers performances and the students skills acquiring. The study recommended the implementation of the AIM model for the sake of teachers performances and students' learning outcomes.

Keywords: AIM, Improvement Model, Classera, Al-Andalus Improvement Model.

1. INTRODUCTION

You can't manage what you don't measure, is an old adage that is working nowadays. If you don't measure something, you can't monitor its change whether better or worse. You can't diagnose for the accurate improvement interventions. [1]
Continuous improvement is a continuous process to improve outcomes. The improvement process can be gradual or breakthrough (i.,e., all at once) "
One of the good approaches for continuous improvement is a four-step model—the plan-do-check-act **(PDCA)** cycle, also known as Deming Cycle or Shewhart Cycle:

- **Plan:** Plan for change.
- **Do:** Implement change plan on a sample.
- **Check:** Analyze the data collected as a result of the change to see if it makes difference or not.
- **Act:** If the effect of the change was positive, we extend the implementation and continuously assess. If the change results were negative, we recur the cycle.[2]

That is why we suggested **AIM** as a model for improvement through repeated cycles of continuous evaluations.

AIM is the model of evaluation suggested by Al-Andalus Private Schools, Educational Development Administration, Studies & Research Department, **KSA**. [3] A is the abbreviation for Al-Andalus, I is the abbreviation for Improvement, and M is the abbreviation for Model. **AIM** targets the improvement of the learning outcomes **(LO)** through the improvement of the learning practices. AIM is suggested to meet the needs of our comprehensive learning system compass structure that leads our learning system to achieve the targeted outcomes. Al-Andalus Learning system is built on criteria for each corner in the learning system (i.e., teacher's criteria, subjects' criteria, learning environment's criteria and educational leadership criteria). For the achievement of these criteria, we chose specific global practices such as Kagan structures for cooperative learning, Classera as a learning management system, Mechatronics for the fusion of Science, Technology, Engineering, Art and Mathematics (i.e., STEAM) as a project based learning, Genius Map for the mental Math, smart classrooms for project based learning in the Form of ANPT model of learning and eventually sports programs for self-direction skills. These practices were chosen to outcome Al-Andalus targeted six skills (i.e., self-direction skills, technical skills, leadership skills, social skills, thinking skills and learning skills) that meet the 21st century skills. These diverse practices are not to be implemented in one class but we have many departments in a way that guarantees targeting the six skills outcome in all classes. All these criteria, practices, and skills are protected by the siege of Al-Andalus values (i.e., Perfection, responsibility, Integrity, creativity, Partnership, and learning). [4]

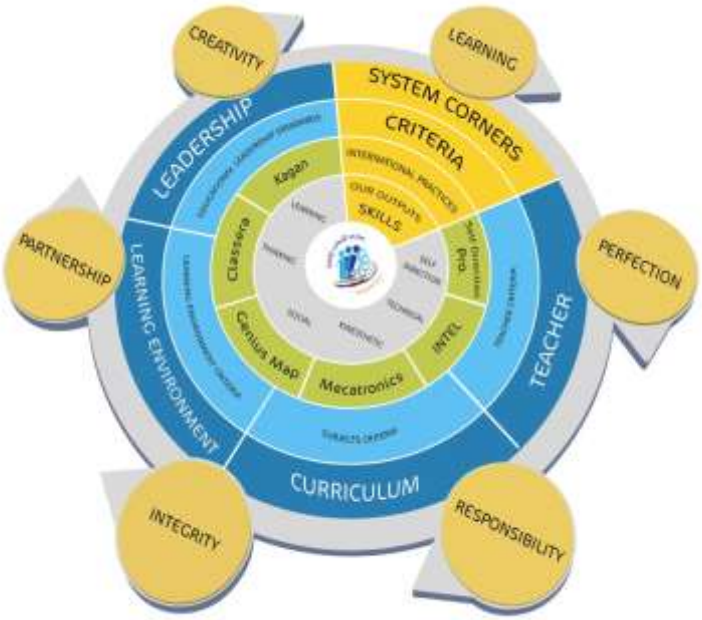

Figure 1: Al-Andalus Private Schools Compass.

2. THE PURPOSE OF THE STUDY

This study is undertaken to test the following null (H0) and alternative (HA) hypotheses;
H0: The average growth in skills of students in classes who experience Al-Andalus Improvement Model (AIM) will be the same as the average growth of students in classes who don't experience the AIM model.
HA: The average growth in skills of students in classes who experience Al-Andalus Improvement Model (AIM) will be different from the average growth of students in classes who don't experience the AIM model

3. HOW AIM WORKS /METHODOLOGY

3.1. How AIM works

To explain how this model of evaluation, AIM, works let us divide the model into steps:
Step 1: The assessment processes using the assessment tools designated by Al-Andalus Educational Development Administration, Assessment and Evaluation Department in cooperation with Studies and

Researches department using the assessment tools programmed by Classera Learning Management System (LMS).

Step 2: The scores are recorded on Classera LMS to be further analyzed in a diagnostic way for each detail in each assessment tool and reported to the schools' leaders to make their own improvement plans, with support from the Educational Development Administration, to be implemented and the outcomes are to be measured again after an academic quarter.

Table I: Learning performance evaluation

field	contribution	percentage	percentile
Weighted Learning Environment Rubric score	70%		
Weighted Student objectives' growth(SOG)	30%		
Weighted Percentile			
Rank			

- Evaluation station is a criteria –based test that its questions are selected from SAT quizzes, which in turn treat the same topics in the curricula and the grade.
- Weighted Learning Environment (WLE) score is obtained from the equation (weighted WLP = (Learning Environment Score LP x 70)**/** 100
- Students growth objectives are obtained from the equation (SGO = [Evaluation station score - Pre evaluation station score / Pre-evaluation station score] x 100)
- Weighted SGO is obtained from the equation: (Weighted SGO = (SGO x 30)/100)

TABLE 2: Learning practices evaluation

Fields	Aspects	Percentage	Percentile
Classroom management	Team Formation		
	Class-building		
	Class discipline		
	Learners' positions		
	work teams		
Teaching Strategies	Appropriateness to content		
	Achieve the principles of learning (team work)		
Evaluation & Improvement	Assessment tools		
	Self-assessment		
	Content mastery		
Social Learning	Acquiring Social learning Skills		
Digital Learning	Acquiring Technical learning skills		

- The fields' contributions in the rubric, which is used to assess the learning environment, is as shown below:
  - Classroom management (20%)

- Teaching strategies (25%)
- Evaluation & improvement (25%)
- Social learning (15%)
- Digital learning (15%)

- Each of the learning Aspects for each field has its own indicators to meet the levels or grades as a rubric (i.e., the learning environment assessment rubric).
- The learning practices evaluation is quarterly.

Table 3: KPI Distribution

Criteria	Standards			
	Level 1	Level 2	Level 3	Level 4

- Standards are the quality levels whereas Criteria are the quality specifications
- The standards are assigned upon basis of percentages taken from the scores of the learning environment evaluation rubric programmed on Classera learning management systems (LMS) which analyzes the criteria scores to the four levels:
  - Level 1: less than 35%
  - Level 2: from 35% up to less than 50%
  - Level 3: from 50% up to less than 75%
  - Level 4: equals or greater than 75%

Table 4: Teacher students' scores in the evaluation station

Subject fields	Contribution	Percentage
Field 1 /Aspect 1		
Field 2/Aspect 2		
Field 3/Aspect 3		
Field n//Aspect n		

- Evaluation station is a criteria –based test that its questions are selected from SAT quizzes that treat the same topics in the curricula and the grade.
- We calculate the weighted percentage of the field/ from the equation "weighted percentage = (Score x percentage x contribution)/ 100"
- Contribution how much the field is represented in the subject as Percentage
- 30 is the highest degree of the evaluation station (Standardized test programmed on classera)
- The fields' scores are taken as diagnostics to build the improvement plans for each targeted field (i.e., below 50% scores).

NB: each subject is divided into fields such as in science we divide the subject into many fields as scientific research, physical processes, life characteristics, etc.

Table 5: Criteria distribution for each field

Field Criteria	Standards			
	Level 1	Level 2	Level 3	Level 4

Standards and Fields' Criteria are dealt with the way mentioned below table 3

Table 6: Evaluating the Effect of the Improvement Plans on the Students' Growth Objectives (SGO)

Targeted Criteria	Criteria annual scores		
	Previous year	Current year	Growth
1			
2			
3			
The general mean of SGO			

- We calculate the SGO from the equation " SGO = (this year evaluation station score – last year evaluation station score) x 30 / (30 – previous evaluation station score)
- 30 is the highest degree of the SGO
- We calculate the mean of SGO to be considered in the teacher's performance score.

Figure 2: AIM Model Diagram

After each quarter we:

- consider the result of each quarter and the first evaluation station as the context (i.e., the reality).
- implement the theory of change as the following steps:

- First, identify the desired result that we strive to achieve.
- Second, assign the intermediate outcomes (i.e., gradual changes) between the real situations and the desired result.
- Third, we plan activities to achieve the intermediate outcomes and the first intermediate outcome is the reality for the second intermediate outcome and so on.[5]
- Fourth, to be assured that each intermediate outcome is achieved we make an assessment.

3.2 STUDY DESIGN

A pretest-posttest two-group randomized experimental design was used in this study. In notational form, the design can be depicted as:

R O1 X O2
R O1 O2

Where:
R = the groups were randomly assigned
O = the two measures (Learning environment rubric, the standardized test and the Skills' Rubrics)
X = AIM model

The control group didn't experience AIM whereas the experimental group experienced AIM. All students were subjected to pretest and posttest at regular intervals for the student objective growth and skills rubrics whereas teachers were evaluated using learning environment rubric each academic quarter besides considering his students objectives growth annually from the evaluation station.

Table 7: Students study groups

Data	Groups	
	Experimental	Control
N (40)	20	20
Independent variable	AIM Model	traditional
Dependent Variable	Al-Andalus Targeted six skills (i.e., self-direction skills, technical skills, leadership skills, social skills, thinking skills and learning skills)	

Table 8: Teachers study groups

Data	Groups	
	Experimental	Control
N (16)	8	8
Independent variable	AIM Model	traditional
Dependent Variable	learning performance (i.e., learning environment evaluation + SOG)	

3.3 DATA ANALYSIS AND INTERPRETATION

We got score reports for the evaluation stations (i., e., standardized tests (automatically recorded), the rubrics scores (recorded manually), and SGO (automatically recorded) from the learning management system. The results of the pre-assessment and the post-assessment were analyzed in percentages. The data were analyzed for testing the hypotheses and deducing the conclusion and recommendations.

The study used the unpaired t-test, p-value and correlation coefficient to test the hypotheses and come up with the conclusions and the recommendations.

Table 9: AIM Effect on "Students Targeted Skills"

calculations	Groups	
	Experimental	Control
N	21	21
Growth Mean	0.490000	0.062024
Std. Deviation	0.078910	0.062024
SEM	0.017220	0.005385
*t	23.7212	
Sig. (2- tailed p-value)	less than 0.0001	
Conclusion	Sig.	

* **t** is the value of the t- statistic at (14) degree of freedom .

Table 9 shows that the p-value (the significance) is less than 0.0001. By conventional criteria, this difference is considered to be extremely statistically significant. This means that there is significant difference in the skills acquiring between students who experienced the AIM model and those who did not experienced the AIM model.
We would reject the null hypothesis in favor of the alternative hypothesis.

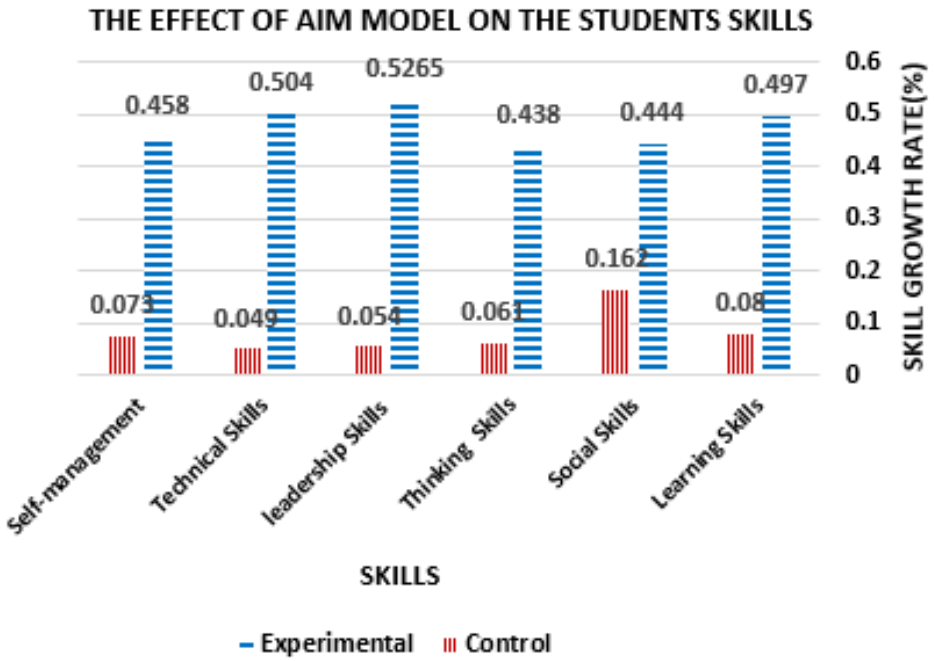

Figure 3: The effect of AIM model on the student's skills

Table 10: AIM effect on "Teachers' Performance"

calculations	Groups	
	Experimental	Control
N	8	8

Growth Mean	0.3478250	0.0423575
Std. Deviation	0.0763579	0.0269303
SEM	0.0269966	0.0095213
*t	10.6708	
Sig. (2- tailed p-value)	0.0001	
Conclusion	Sig.	

* **t** is the value of the t- statistic at (40) degree of freedom .

Table 10 shows the two-tailed P value is less than 0.0001
By conventional criteria, this difference is considered to be extremely statistically significant. This means that there is a significant difference in the teachers' performance growth between the teachers experienced "AIM Model " and the teachers who didn't experienced AIM and the null hypothesis is rejected in favor of the alternative hypothesis.

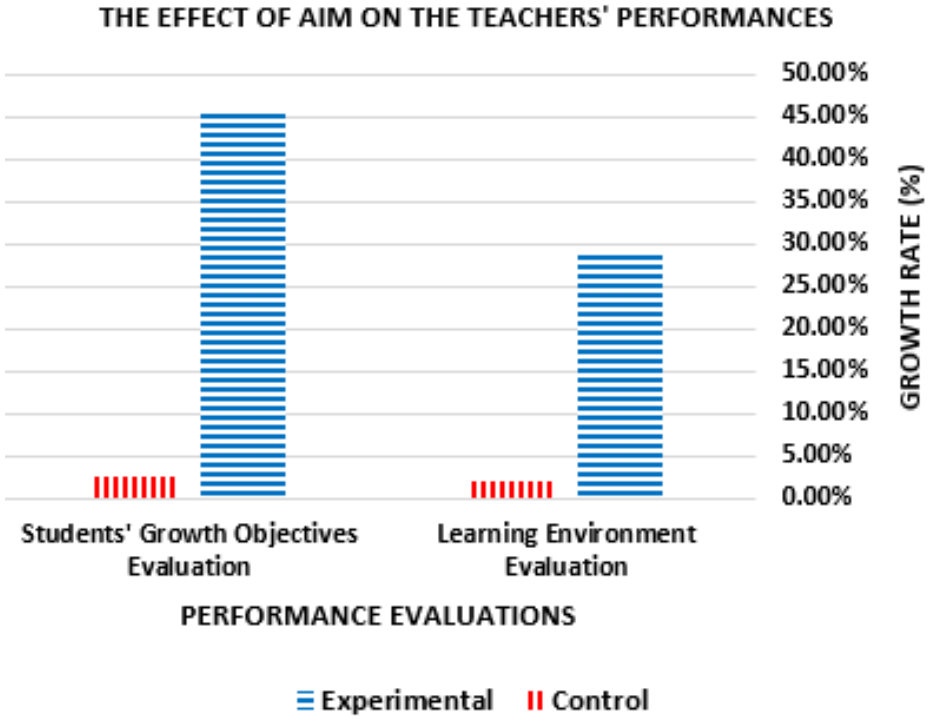

Figure 4: The Effect of AIM Model on the Teachers' Performances

4. CONCLUSION

Based on the findings of this study, the conclusion can be made that:

- The results of this study were clearly contrary to the null hypothesis.
- There is a strong correlation between the teachers performance and their students' skills' acquiring as, the correlation quotient is 0.9135, which is considered as a strong positive correlation.[6]
- There are significant positive effects of the AIM Model on the learning outcomes (i.e., skills' acquiring).
- There is a significant statistical difference in the skills acquiring growth between students who experienced the AIM model and those who didn't experience the AIM model of improvement for the favor of the Al-Andalus Improvement Model (AIM).

5. RECOMMENDATIONS

Based on the above-mentioned conclusions, we recommend the following:

- Applying AIM model for to improve the learning outcomes such as skills' acquisition in their real context.
- performing a longitudinal study to assure the effectiveness of this model on learning process
- It is important that attempts to replicate this study also try to measure the effect of AIM in the presence of other variables such as gender and age.

6. ADDENDUM

6.1. Evaluation is a identifying of a worth or significance, using criteria controlled by a group of standards. To diagnose the reality the make interventions to make a desired change or growth. [7]

6.2. Improvement: is the process of planning and doing a change or changes to get better results. [8]

6.3. Evaluation Station: It is a criteria –based test that its questions are selected from standardized quizzes that treat the same topics in the curricula and the grade such as SAT test.

6.4. Student Growth Objectives (SGO):

SGOs are long-term academic goals a set of teachers assign for their students to develop their learning.[9]

7. ACKNOWLEDGEMENT

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