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UNDERSTANDING THE INFLUENCES OF THE MATHEMATICS DIRECT CURRICULUM AND TEACHING STRATEGIES ON STUDENTS' ATTAINMENT AMONG CYCLE THREE PUBLIC SCHOOL IN RAS AL

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Abstract

Education can become an effortless process when it is done willingly. "Brains that think brightly have bright futures!" Preparatory students today are significantly better than they were in the past; they are more advanced in their instruction and more capable of absorbing the learning methods that are employed with them. Learning is the base of life, teaching is the base of learning, and a curriculum is the base of teaching. This study focused on the influence of curriculum and instructional practices on student achievement in public schools in Ras Al-Khaimah, United Arab Emirates.

The researchers adopted a sequential, mixed-method, explanatory design with two periods of data collection. First, random samples of Mathematics teachers from public schools in Ras Al-Khaimah and Dubai were sent internet questionnaires. The data was then analyzed using the (SPSS) software package for both descriptive and inferential statistics. Subsequently, semi-structured interviews were conducted with a subset of the sample population determined based on the interpretation of the quantitative data. This data was then subjected to numerous levels of coding for content analysis to provide better context and explanation for the quantitative findings.

Introduction

To respond to the fast-changing needs of the global world, it is common that countries often begin some reforms to their education structures. The vision of curriculum reform signifies the purpose of the curriculum change. A lot of studies discuss the effect of improving or changing the curriculum on students' achievements. The Eight-Year Study discovered that localized curriculum customization favorably affected student achievement. In addition, the curriculum paradigm framework comprised of the learner, content, and social factors pushed educators to approach the curriculum from a variety of angles. The school's curriculum allowed for the integration of all three components. In other words, teachers will be able to take the academic ability of their students into account while designing a curriculum to help kids realize their maximum potential. In addition, teachers will teach the subject matter while keeping in mind the elements that influence the curriculum, such as human development, social dynamics, the nature of knowledge, and the nature of the learner. Localized curriculum modification made a difference for the schools in his sample and influenced mathematics achievement among students. Customizing the curriculum to match the requirements of the pupils who must encounter it has a significant impact on student performance on standardized examinations in some school districts located in the poorest communities of New Jersey. (Luciano,2017). Another study suggested a notion of horizontally differentiated educational courses based on their pacing. The match quality of a curriculum for a student was jointly determined by the pace of the curriculum and the student's level of preparation; hence, different students benefited differently from the same program.

Furthermore, a change in the curricular pace had distributional effects across students, benefiting some while hurting others. They tested the model prediction in Germany, which introduced a faster-paced curriculum for academic-track students They discovered evidence supporting their hypothesis: while the change boosts students' test results on average, the benefits are more obvious for kids who are well-prepared. In contrast, the reform does not appear to benefit pupils with less preparation. (Andrietti, 2019). Another study found that most of the education reforms happening around the globe today are triggered by the need of the global economy; they implemented the study in Hong Kong. During education reforms and curriculum development, it is natural to focus more on global needs and seek out successful models from other nations. Hong Kong's experience demonstrates that local cultural issues must be considered in any reforms, as the success of any new reforms is contingent on how well all stakeholders adapt to the changes. The structural change in the secondary school system has been followed by a change from a three-year to a four-year undergraduate curriculum in the higher education system. This modification made it easier for Hong Kong graduates to pursue further education or work abroad, particularly in countries with similar educational systems, such as China, North America, and Australia. To provide the students with a broader academic experience by putting greater emphasis on non-academic learning components and extra-curricular experience; to focus on the all-round development of students; to promote enhanced linkages to the workplace; to enhance opportunities for further studies abroad; and to produce graduates who can succeed in the global knowledge economy. (Kahangamage,2017).

Another article describes the present mathematics reform in high school and discusses its implications for middle school reform. Common themes of high school reform include greater integration of mathematical concepts, a focus on active learning, the significance of evaluation as a component of reform, and the accessibility of mathematics to all students. As detailed in this article, reform entails a radical shift in curriculum, teaching, and evaluation. These changes have ramifications for the content, methodology, and assessment of middle school mathematics. This article examines changes in four high school topic strands (algebra, geometry and trigonometry, statistics and probability, and discrete mathematics) and suggests methods for reforming these strands in middle school classes. In addition, connections between instruction and evaluation in high school and middle school mathematics curricula are discussed. (Hart,1998).

According to a survey conducted by the al-Qassimi foundation in Ras al Khaimah, the United Arab Emirates (UAE) has made significant efforts to reimagine and improve its public education system. Many reforms have been adopted by local education authorities in an effort to move education from rote memorization to a skills-based system that prepares students for success in the 21st century. This article examined the history of curriculum development in the United Arab Emirates, the role of various agencies, ministries, and current efforts, as well as the obstacles and opportunities that lay ahead on the path to reform. The curriculum must be defined holistically, encompassing more than what should be taught, how it should be taught, and how it should be graded. Without a holistic approach, curriculum development will continue to be viewed only in terms of textbook creation. This paper proposes the following initiatives to address such fundamental curriculum issues in the UAE: providing more constructive teacher training, expanding the scope of curriculum content, implementing effective evaluation strategies, and investing in the long-term local capacity to develop curriculum. If the public education sector adopts a broader view of the curriculum, such initiatives would definitely bring about enduring and significant change to the UAE educational system. (Ridge,2017).

It is worth mentioning the existence of a study that has used a randomized design to compare the impact of multiple elementary math textbooks on student achievement. This study randomly assigned one of four curricula to first and second-grade classrooms in one hundred and eleven schools in twelve districts

across the United States. It started in the school year of 2006/2007, before the development of the American standards; thus, these texts were not designed according to the predominant standards in America now. Nonetheless, these texts include Investigations in Mathematics and Math Expressions, which generally are reform-oriented with a focus on building conceptual understanding; and Saxon Math and envision Math, which is described as more conventional and focused on teacher-directed instruction of procedures (Remillard, Harris, & Agodini, 2014; Stein, Remillard, & Smith, 2007). The teachers, throughout the study, received two to three days of training on the assigned textbook. The second-grade classrooms that depended on Saxon Math and envision Math outperformed those using envision Math by 0.12 and 0.17 standard deviations. The effect sizes are large relative to most educational interventions (Fryer, 2017). This effect size would be larger than the effect of having a novice teacher versus an experienced one, by roughly 0.08 standard deviation, and roughly equivalent to 1 standard deviation in teacher efficacy (Agodini et al. 2010, Rockoff, 2004).

Two other studies have employed randomized designs to investigate the effect of individual curricula. One of them evaluated the effectiveness of the post-American standards textbook Math in Focus by randomly assigning 22 clusters of third through fifth-grade teachers in twelve schools in Clark County School District, Las Vegas Nevada during the school year of 2011/2012. The textbook is modeled after the Singaporean math curriculum which emphasizes student-directed problem-solving. The teachers that related to the study attended a very short training session that spanned a length of an hour and a half to three hours during the school year. The researchers have found that after the first year of usage the students in grade-level teams, randomly assigned to adopt Math in Focus, outperformed students in the control group, who used the math curricula already in place in their school, by 0.11 to 0.15 standard deviation on the Stanford Achievement Test. Yet, they found no impact of Math in Focus on the criterion-referenced test required by the state of Nevada. (Jaciw et al. 2016)

The second study assigned, at random, Go Math to first through third-grade classrooms in nine schools across seven states in America during the school year of 2012/2013. The textbook in question was written with the American standards in mind and it aims to balance procedural and conceptual understanding. The researchers, after a year of the beginning of the study, did not find any statistically significant differences in average student achievement in classrooms using Go Math, as compared to control classrooms using the mathematics program already in place in their schools. Despite that, the study was underpowered to detect effects smaller than 0.2 standard deviations. (Eddy et al. 2014)

Several non-experimental studies have identified moderate effects of textbooks on student achievement gains. Several studies have employed matching methods and school-level aggregate achievement to measure textbook efficacy in three states; Florida, Indiana, and California (Bhatt & Koedel, 2012; Bhatt, Koedel & Lehmann, 2013; Koedel et al., 2017). The researchers were forced to employ a two-step process in Florida and California due to the existence of many textbooks. They first identified a differentially effective text based on initial exploratory analysis and then compared that text against a composite comparison group. Even though such a process assists in narrowing down the focus of inquiry, the hazard lies in that the initial exploration may identify the successful textbook due to chance differences in achievement. The investigators of this study have practiced caution by conducting several validity tests in the second step; for example, verifying that the timing of any achievement increase aligned with the textbook adoption. However, these tests do not uncover anomalies within the sample. (Koedel et al., 2017).

The selection of textbooks and curriculum is significant due to many reasons. However, the extent of difference between one book versus another is highly important due to its possible influence on the desired student learning quota. The previously stated broad theoretical literature from multiple

disciplinary perspectives proposes the existence of critical links between curricula and desired student outcomes. The role of content is vital, particularly the way the material is presented. As an example, the different viewpoints in the last decades, such as the National Council of Teachers of Mathematics, 1989, 1991, and 2000, have resulted in new learning standards that focus on conceptual rather than procedural instruction (Schoenfeld, 2004) and new textbooks and curriculum materials that align with this approach. (Reys, 2001) The reform-oriented materials which are concerned with higher-order thinking have, typically, competed with more conventional resources; focused on teaching standard algorithms in sequence and using these procedures to solve basic problems. Several debates concerning the design of textbooks have occurred in the educator practice community but align with a broader push for schools to help students build the sorts of non-routine problem-solving skills that increasingly are valued in the labor market (Autor, Levy, & Murnane, 2003).

There was also a study focused on teacher motivation that has been defined as Motivation is fundamental to human nature and performance (Klassen, 2021). There was a significant correlation between instructor autonomous motivation/intrinsic motivation and student autonomous motivation/intrinsic motivation. In the research of Ohle et al. (2015) and Keller et al. (2017), the first-wave assessment of teacher interest was utilized to Predict the student engagement and performance measured in the second wave. According to Ahn et al. (2021), all factors except attainment were considered. Measures were administered in the same wave in three of the five relevant studies (Ahn et al., 2021; Lam et al., 2009; Roth et al., 2004).

Moreover, a study demonstrated that researchers expected to determine how creative teaching strategies affected student progress. This experiment was conducted on first-grade pupils to examine the psychological impact of teacher behavior and teaching methods on kids' learning (Steven McGee, Ph.D. & Howard, E. D., 1998).

Research Questions

This mixed-method study focused on Understanding the Influences of the Mathematics Direct Curriculum and Teaching Strategies on Students' Attainment among Cycle Three Public schools in Ras Al Khaimah.

In particular, the study will first explore the curriculum and supporting textbooks. The key players in the reform will be interviewed. This case study has implications for the study of the curriculum in a highly prescriptive centralized governed educational system that has specifically stated a plan to enhance achievement in Mathematics.

To achieve this aim, a thorough review of the existing literature resulted in formulating the following research questions:

1) What are the implications of mathematics curriculum reform on the students' achievement in Cycle Three Public School in Ras Al Khaimah?
2) What are the implications of mathematics teaching strategies on the students' Attainment in Cycle Three Public School in Ras Al Khaimah?
3) Does a relationship exist between or between the mathematics curriculum reform and mathematics teaching strategies on the students' Attainment in Cycle Three Public School in Ras Al Khaimah?.

Research Hypotheses

The following null and alternate hypotheses were examined in support of research question three

1- Ho: It is expected that there are no relationships between or between the mathematics

curriculum and teaching strategies on the students' Attainment in Cycle Three Public School in Ras Al Khaimah?

2- H1: It is expected that there are Relationships between or between the mathematics curriculum and teaching strategies on the students' Attainment in Cycle Three Public School in Ras Al Khaimah?

Research Methodology

This study adopted a mixed-method approach that included the collection, analysis, and interpretation of both quantitative and qualitative data within the same study (Creswell, 2014). This study's research design is explanatory sequential, in which data are collected in two periods. First, an e-questionnaire was circulated and the analysis of the acquired quantitative data was completed; around 97 respondents completed the questionnaire. Subsequently, the researcher performed seven semi-structured interviews with a selected sample of individuals to gather descriptive data relevant to the findings from the quantitative study (Halcomb and Hickman, 2015). As a means of further confirming the initial findings, the researcher has chosen this methodology. In addition, using quantitative data initially will allow the researcher to determine whether the relationships between the variables are significant. If these relationships are confirmed, the interviews may help to explain why the links between variables exist (Saunders, Lewis, and Thornhill, 2009). Furthermore, interviewing Mathematics teachers working in different public schools in Ras Al-Khaimah and the Dubai ministry of education building will ensure that the findings are grounded in participants' experiences and points of view and provide the researcher with the opportunity to gain comprehensive and in-depth data about the Influences of the Mathematics Direct Curriculum and Teaching Strategies on Students Attainment among Cycle Three Public Schools in Ras Al-Khaimah.

Sampling and Data Collection

Participants in this study were mathematics teachers from various public schools in Ras Al-Khaimah and the Dubai ministry of education building. The researcher has employed non-probability sampling approaches in which participants are picked based on non-random criteria and not every individual has a chance to be included (Tansey, 2007). As it was impossible to reach all Mathematics teachers in Ras al-Khaimah for the quantitative data collection (questionnaire), snowball sampling was used. This strategy has allowed the researcher to attract volunteers through other participants (Burns and Grove, 2005). The purpose of the qualitative data collection (interviews) was to acquire a deeper understanding of the Influences of the Mathematics Direct Curriculum and Teaching Strategies on Students' Achievement in Cycle Three Public Schools in Ras Al-Khaimah. After assessing the findings of the quantitative components and using his or her discretion to select a sample that best serves the research objectives, the researcher concludes the sample (Etikan and Alkassim, 2016).

For the sample size, the researcher distributed the primary instrument of this study (questionnaire) to all mathematics teachers from public schools in Ras Al-Khaimah and the Dubai ministry of education building. Approximately 140 questionnaires have been completed in total. After interpreting the findings of the quantitative components, the researcher identified the purposeful sample and conducted seven semi-structured interviews until saturation was reached. In this study, saturation was reached after interviewing the seventh subject (Maxwell, 2013).

Interview Sampling Strategy and Rationale

Criterion 1.

Full-time employment: This study sought to understand the Influences of the Mathematics Direct

Curriculum and Teaching Strategies on Students' Attainment among Cycle Three Public Schools in Ras Al-Khaimah are best suited to address these facets of the study.

Criterion 2.

Workplace Location (Emirate of Ras Al-Khaimah): This study sought to obtain a greater understanding of the Influences of the Mathematics Direct Curriculum and Teaching Strategies on Students Attainment among Cycle Three Public Schools in Ras Al-Khaimah, all the participants of this study are working in a public school in Ras Al-Khaimah.

Criterion3.

Professional experience (at least three years in a public school): Since the purpose of this study is to gain a deeper understanding of the Influences of the Mathematics Direct Curriculum and Teaching Strategies on Students' Attainment in Cycle Three Public Schools in Ras Al-Khaimah, the participants in this study will have at least three years of experience in schools. This is essential because it guarantees that the findings are grounded in the participants' experiences.

Criterion 4.

Participants of this study teach cycle three students in the public schools in Ras Al-Khaimah or participate in designing mathematics curriculum in the ministry of education to gain comprehensive and in-depth data about the Influences of the Mathematics Direct Curriculum and Teaching Strategies on Students' Attainment in Cycle Three Public Schools in Ras Al-Khaimah.

Data Collection Instrumentations

Phase 1: Structured Questionnaire

A questionnaire is a way of collecting data in which each person responds to the same set of questions in the same order for the objective of acquiring information from the respondents (De Vaus, 2002). (De Vaus, 2002). The questions in the structured questionnaire were closed-ended to assist the process of assessing the data from respondents. The questions were prepared on a four-point, forced-choice Likert scale which allows respondents to express the degree to which a participant agrees or disagrees with a given statement. In constructing the questionnaire, the researcher utilized Google forms software and distributed it to the participants by email and embedding it on social media sites. Participants were able to complete the questionnaire electronically utilizing their electronic devices such as PCs, mobile phones, iPads, and tablets. Bourque and Clark (1994 quoted in Saunders, Lewis, and Thornhill, 2009) offer three techniques that the researcher can use in constructing questions: accept questions that are used in other questionnaires or adapt questions that are used in other questionnaires, or develop his/her questions. For strengthening the validity and reliability of the questionnaire, the researcher altered the questions from other surveys and findings. The questionnaire was created in English and Arabic and has included 28 questions, so that it may be finished within four to six minutes. The questionnaire was broken into three pieces. The first section has been utilized to obtain background information on the individual. The second and the third portions of the questionnaire were utilized to help in answering the study questions about the Influences of the Mathematics Direct Curriculum and Teaching Strategies on Students' Attainment in Cycle Three Public Schools in Ras Al-Khaimah.

Phase 2: Semi-Structured interviews

An interview is another significant approach to gathering data including verbal communications between two or more persons (Kahn and Cannell, 1957 referenced in Saunders, Lewis, and Thornhill,

2009). (Kahn and Cannell, 1957 cited in Saunders, Lewis, and Thornhill, 2009). In this study, the researcher has done semi-structured interviews that featured a set of open-ended questions which allows the interviewer and interviewee to discuss issues in more detail; as such, each interview may vary from one another (Bernard, 2013). (Bernard, 2013). The research has purposefully sampled the participants based on the criterion that has been determined after interpreting the findings of the quantitative components. The researcher has picked a subset of a wider population with whom he has conducted semi-structured interviews to extract descriptive data as a means of explaining the questionnaires' findings. All the interviews were audio-recorded with the interviewees and transcribed verbatim for the analysis.

Trustworthiness, Validity, and Reliability

Ethics

This study was planned to use a mixed-method approach that included both quantitative methods, a questionnaire, and qualitative methods, semi-structured interviews, so the researcher guaranteed that participant conduct and replies were ethical. The fact that the questionnaire was distributed over an electronic link strengthened the respondents' privacy and anonymity. For the face-to-face interview, the researcher chose the teachers who teach mathematics in cycle three in Ras Al-Khaimah or construct a mathematics curriculum. Therefore, the participants will be in a better position to provide honest ideas and impressions devoid of any emotions. In addition, all participants completed an informed consent form to ensure that they are aware that their participation is entirely voluntary and that their contributions would stay anonymous (Glesne, 2011). After transcribing and reviewing the audio recording of the interviews, the acquired data were discarded without any personally identifying information.

Data Analysis

This study utilized both quantitative and qualitative analyses. Using the SPSS software package, questionnaire data were analyzed using descriptive statistics and exploratory factor analysis, whereas qualitative data were explored thematically using content analysis. To summarize the characteristics of the teachers who participated in the study, descriptive statistics (i.e., mean, median, mode, and frequencies) were calculated for all study participants and variables. Exploratory factor analysis was undertaken to discover the number of factors that influence the variables and to determine the relationships between the variables (Yong & Pearce, 2013). Exploratory Factor Analysis (EFA) is a technique within factor analysis that summarizes data and identifies the correlations and patterns between measured variables such that they may be easily interpreted and understood. It is typically employed to rearrange variables into a limited number of groups based on shared variance (Yong & Pearce, 2013).

KMO and Bartlett's Test

The rotational component matrix below helps in minimizing the number of components on which the variables under investigation have high loadings (Chetty, 2015) and helps in defining what each component represents. Also, Principal Com- ponents Analysis was applied to decrease the data, then follow-up with a 'true' factor analysis strategy, while the Varimax rotation method was used to clarify the link between factors. Looking at the table below. To answer the research hypotheses, the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were computed. The KMO determines the sample adequacy, which must be greater than.60 to do satisfactory factor analysis. The KMO result in this study is.664, indicating that factor analysis can proceed. The null hypothesis is tested using Bartlett's Test of Sphericity, which indicates the strength of the link between variables. To reject the null hypothesis, a significant level of Bartlett's Test of Sphericity result must be less than 0.05 (p.05). Indeed, these tests reveal that the variables have regular correlations (p.001). This signifies that the significance level is low enough to reject the null hypothesis and confirm that the variables have systematic relationships, i.e., strong correlations exist between the three factors: curriculum, strategies, curricular subjects, and exercises, and 21st century abilities in students

Looking at the table below, the first component is most highly correlated with questions related to the mathematics curriculum. The second component is most highly connected with questions related to the strategies. The third component is most highly associated with questions related to the curriculum topics and exercises. The fourth component is most highly connected with questions related to 21st-century skills, students – center learning, and students learning styles. The fifth component is most highly connected with questions related to project-based learning and real-life applications.

Rotated Component Matrix					
	Component				
	1	2	3	4	5
I have a good knowledge of 21st century skills		.530		.507	
I use high- return teaching strategies				.567	
I make sure to put the student at the center of the educational process				.644	
I focus on the project learning curve					.857
I carry out activities that focus on developing critical thinking skill among students.		.733			
I have the knowledge of digital skills needed for a 21st century teacher.		.712			
I focus on real-life problems and encourage students to find out solutions in light of what they are learning		.570			.559
I am keen on the integration of teaching.		.689			
I strive to provide equal learning opportunities for all students, regardless of their learning styles				.657	
The subject topics are in correspondence with the scientific development of mathematics & Science	.608				
The course is appropriate for all students' age	.742				
The course is suitable for the Emirati environment	.786				
The book activities are sufficient to understand the lessons	.639				
The topics are related to student's real life	.764				
The topics of the book are sequential and gradual			.714		
The course is flexible and applicable to life	.642				
The duration of the study is sufficient to teach Math			.594		
The book exercises are clear and understandable			.603		
Exercise book (activity book) is necessary to reinforce skills			.722		
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 12 iterations.					

In-depth Inerviews

Walter (2013) mentioned that an in-depth interview is one of the most common research methodologies employed - in the social sciences. Data analysis for the interviews started immediately after selecting the purposeful sample based on the quantitative analysis. The qualitative data sought through semi-structured interviews are obtained in Arabic. This stage has enabled a way by which individuals can more freely articulate their conceptualizations, viewpoints, and lived experiences. As such, material has been first transcribed verbatim in Arabic. The researcher has double-checked the Arabic transcripts for accuracy before coding.

Open and axial codes have been done in Arabic and then axial codes have been translated into English. These English translations have been back-translated by fluent specialists in the field, then the researcher proceeded coding in English. The researcher has employed a topic analysis approach in studying the Arabic transcripts. Thematic analysis is a way of reviewing and summarizing findings to uncover common themes, subjects, and concepts that show up frequently and the relationship between them (Pope, Mays & Popay, 2007; Namey et.al., 2008). (Pope, Mays & Popay, 2007; Namey et.al., 2008).

Participants' Background

The seven participants who are in this study were all ex-pats and are working in different public schools in Ras Al-Khaimah and the Dubai ministry of education building. All the participants met the criteria of the study: full-time employment, working in Ras Al-Khaimah, having more than five-year experience, and having school-age children. The researcher held no supervisory or evaluative role over any of the seven participants. The participants provided their background information before the interviews, which have been presented in the shown table.

Name	Age	Total years of Professional Experience	No of Children
Ruba	40-45	14	2
Sheri	25-30	3	1
Raouf	50-55	25	3
Hanan	50-55	20	3
Naila	40-45	10	2
Sameh	39-44	10	3
Anas	40-45	14	3

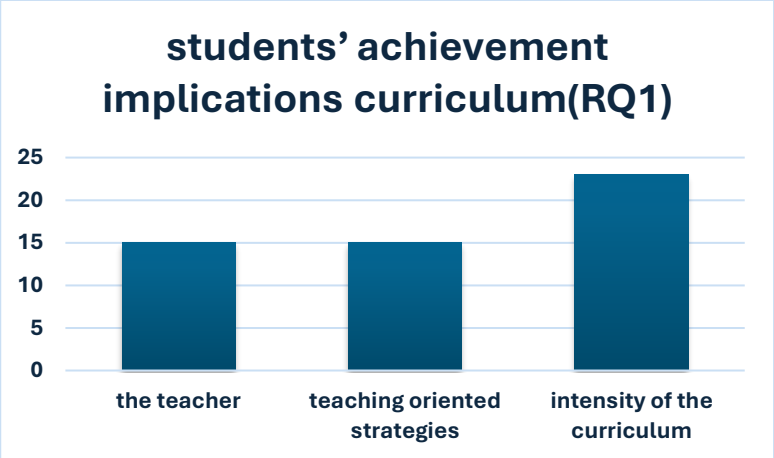
Table3: Participants' Background

Findings

This section offers the study's findings, which are organized into three topics and address the research questions that guided this study.

WHAT ARE THE IMPLICATIONS OF MATHEMATICS CURRICULUM REFORM ON THE STUDENTS' ACHIEVEMENT IN CYCLE THREE PUBLIC SCHOOL IN RAS AL KHAIMAH?

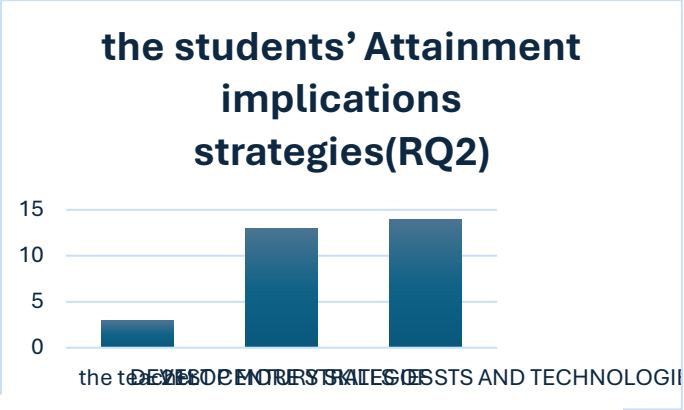
THEME one: Students' achievement implications curriculum depends on the teacher, the oriented strategies, and the intensity of the curriculum.



All participants emphasized the influence of the teacher, directed strategies, and curriculum intensity on the impact of the curriculum on students' academic achievement. Where Ruba emphasized the importance of raising the teacher's salary and the teacher's need to feel safe, while Hanan commented on the importance of the teacher's guide being a reference for him in teaching. Raouf commented on the need for continuous teacher training. Naila commented on the necessity of integrating mathematics practices and stimulating innovation and maintaining it. Sherry also commented on simplifying the language and ideas during the teaching process. In addition, Ruba commented on the use of simulation strategy and the use of images when teaching. Raouf added on the need to use student-based learning. Finally, the curriculum density and the rearrangement of the sequence matrix on which Raouf commented. The latter also added the possibility of deleting some statistics topics. In addition, Ruba added on the necessity of experimental tests for students to restore confidence between the student and the teacher.

WHAT ARE THE IMPLICATIONS OF MATHEMATICS TEACHING STRATEGIES ON THE STUDENTS' ATTAINMENT IN CYCLE THREE PUBLIC SCHOOL IN RAS AL KHAIMAH?

THEME Two: Teachers, strategies, and 21st-century skills have significant implications on the students' attainment.

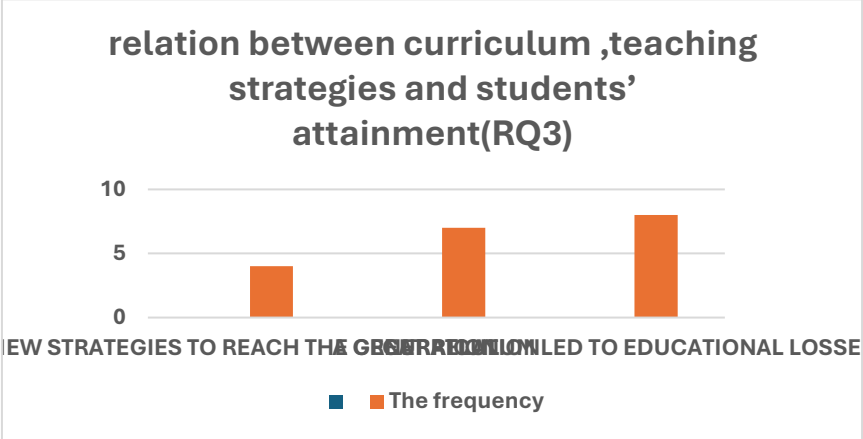


Most of the participants agreed on the prominent role of the teacher and the development of teaching strategies by adding twenty-first-century skills to the student's academic achievement. Ruba and Hanan explained the necessity of raising the teacher's salary to be given without tension. Supporting the teacher with the required tools for this by setting up a mathematics lab in each school. Moreover, Naila agreed on the need to use mathematics practices in teaching. Finally, Raouf added the importance of teaching by exploration. Referring a little to twenty-first-century skills, such as exploration and metacognition strategy, which Raouf acknowledged during the interview.

DOES A RELATIONSHIP EXIST BETWEEN OR BETWEEN THE MATHEMATICS CURRICULUM REFORM AND MATHEMATICS TEACHING STRATEGIES ON THE STUDENTS' ATTAINMENT IN CYCLE THREE PUBLIC SCHOOL IN RAS AL KHAIMAH?

THEME Three: There is a significant relationship between the curriculum and the teaching strategies on students' attainment.

Many participants acknowledged the existence of a prominent relationship between curricula and teaching strategies and their impact on students' academic achievement. Raouf stressed the need to use student-centered learning and prepare students for the future. Naila added the importance of using sports practices. Moreover, adhering to educational standards in teaching can have an impact on the clear progress of students and obtaining successful results.



The Findings:

The study suggests raising teachers' salaries, back their confidence by letting them participate in making decisions, and have constant training for new strategies for teaching. therefore, the teacher should use exploration, the 21st skills century, the Teaching Physical Response (TPR) strategy, and the metacognition approaches. Therefore, the study suggested establishing a mathematics lab in each school. In addition, the study suggests that the intensity of the curriculum should be decreased to raise the students' attainment, where there is a significant relationship between the curriculum, teaching strategies, and the students' attainment.

Discussion and Recommendation

These research-validated prior findings on the Influences of the Mathematics Direct Curriculum and Teaching Strategies on Students' Achievement. This study aims to investigate the impact of these factors on student achievement in Cycle Three public schools in Ras Al-Khaimah. By addressing the questions and hypotheses, this study got a greater understanding of the factors influencing Student Achievement in Cycle Three Public Schools in Ras Al-Khaimah. According to (Reys, 2001), the curriculum has an impact on student achievement.

The study suggests raising teachers' salaries as a teacher motivation whereas the previous studies found a relation between the teacher motivation and the students' outcomes (Ohle et al. (2015) and Keller et al. (2017), back their confidence by letting them participate in making decisions and have constant training for new strategies for teaching. therefore, the teacher should use exploration, the 21st skills century, the Teaching Physical Response (TPR) strategy, and the metacognition approaches. Whereas the previous studies confirmed that, (Chauhan,2020). Therefore, the study suggested establishing a mathematics lab in each school. This is what the previous studies stated in the Technical Laboratory, 98 percent of us are able to engage in the lesson, which raises the level of comprehension and achievement to 96 percent, and 97 percent of students are able to evaluate themselves(Almaghamsi,2016). addition, it suggests that the intensity of the curriculum should be decreased to raise the students' attainment, where there is a significant relationship between the curriculum, teaching strategies, and the students' attainment.

Several recommendations are offered to stakeholders and researchers based on these

findings. To regain the lost trust between instructors and students, stakeholders should seek to pique teachers' interest in training, include them in decision-making, raise their wages slightly, and invite them to participate in curriculum design. In public schools in Ras Al-Khaimah, the researchers should conduct additional studies to investigate additional aspects of the Influences of the Mathematics Direct Curriculum and Teaching Strategies on Students' Achievement in the Third Cycle. As the conclusions of this work do not cover all the components necessary to bridge the gap between curriculum, teaching practices, and student achievement, further research is required.

Limitations and Delimitations

This mixed-methods study intends to Assess the Effects of the Mathematics Direct Curriculum and Instructional Methods on Student Achievement in Cycle Three Public Schools in Ras Al Khaimah.The researcher obtained a deeper and more in-depth knowledge of the research problem by combining quantitative and qualitative investigation and data. However, this technique has constraints that are often outside the control of the researcher. One of these limits related to the participants' truthfulness and willingness to share the truth. This is because the acquired data represents the participants' impressions and opinions. However, processes such as computerized questionnaires, triangulation, reflexivity, and positionality were utilized to ensure the data's reliability and validity. This study is further limited by its concentration on cycle three Mathematics instructors in public schools in Ras Al-Khaimah and the small number of curriculum developers in the ministry of education. The extent to which this study's conclusions can be extended to the UAE. According to Sekaran and Bougie (2010), generalizability is the transferability of research findings and conclusions from one setting to another. It would be unreasonable to believe that these findings are indicative of all public schools in the United Arab Emirates.

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