

An Instructional Leadership Model For Improving K-12 Math Learning Towards 21st Century Education

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ABSTRACT: A challenge of teacher education is to improve K-12 math education learning towards 21st century education. There is lots of step to educate mathematics in school level. Instruction method can provide a knowledge into making mathematics teaching and learning. This paper gives knowledge about the skill of mathematics knowledge, and the teacher roles in improving mathematics education. It helps the teachers to teach mathematic in a right and easy manner to the students. Currently what are the ideas available to teach and make the student for better understanding in mathematics.

INTRODUCTION

In the present instructive frameworks approach towards science isn't supporting to the understudies in an application technique for learning. The training strategy for science ought to be more application situated to the understudies. Instructors who instructs science to the understudies, they knowledgeable in application strategy. In any case, it is imperative that, how to instruct science to the understudies to make them enthusiasm for arithmetic and furthermore make them to learn application arranged. In this paper, the proposed model for enhancing arithmetic to the K-12 understudies and how they are learning application situated strategies in the 21st century instruction.

RESEARCH OBJECTIVE (S)

- 1) To explore desirable instructional practices of K-12 Math subjects for the 21st century education
- 2) To ascertain instructional leadership competencies of K-12 Math teachers for improving Math education
- 3) To propose an instructional leadership model for improving K-12 Math education towards 21st century education

LITERATURE REVIEW

1) 21st Century Education in Schools:

Instructing today is progressively mind boggling work, requiring the most astounding measures of expert practice to perform it well (Hargreaves and Goodson 1996). 21st century training in school changes in science and innovation to enhance data and applying the data. Along these lines, the refresh of learning is likewise developed by the innovation. Having a restricted learning, they can't refresh for the better future. They consider the students to bring new embrace aptitude towards the data. Presently we need to think the grown-up learning style, it is imperative to bring old to new thoughts. It is vital to do instructive exercises an individual life. For that they present 'deep rooted learning'. It is followed in global foundations with comprehensive methodology and has the

theory 'instruction from support to grave and, has the accompanying regular general focuses in that capacity: summing up the pre-school training both in amount and quality, comprising a genuine learning premise in necessary instruction, encouraging movement from school to business. Data and innovation are changed dependent on the social structure. The procedure of snappy change thusly, realized new terms and certainties. The new technique is the data. When you consider the public activity style, and the contemplated the social impact. Who takes in the data about the general public they can be affected by person? On the off chance that you need to develop new data in the general public, it brings numerous issues and change the strategies. In the event that strategy producers feel constrained to push for fast change in schools, they have to consider how and why change ought to happen on the off chance that they truly anticipate that it will occur. As per Cuban (1990), most endeavors for change are embraced as strategy, yet are not executed in practices. Training will have a social go for the data society. Instruction isn't only isolated by qualities. It is open framework each can access into the framework. There is no closure in training. Indeed, even we can constrain the data towards the instruction. We have to appreciate the understudy abilities and their aptitude. Everyone has the learning ability in close to home ways. When we swing to the school level, the most legitimate scene for everyday network, we keep running into genuine of basic, social, and professional obstructions. The straightforward truth is that in the common American secondary school the structures for on-going scholarly network don't exist (Grossman and Wine burg 2000:10)

a. 21st century learning and education:

The contrast between the idea of twentieth century training and the idea of 21st century deep rooted learning are expressed by Longworth (2003) as pursues:

Destinations: It is fundamentally focused by the accomplishment of the understudy, so the pursue the tight way approach to succeed their objectives. Be that as it may, in the 21st century has long haul learning, and the existence learning and covers every one of the parts of the school's action. All the educational programs manages fundamental abilities under the necessities of society.

Connection with instruction part: The idea of twentieth century was the transient business however 21st century is the deep rooted learning process. It dependent on the composed beginning system which is accessible to all. It is likewise to make proactive data procedures to expedite all partners side.

In-benefit preparing of educator: It implies every one of the instructors need to go on instructive course as indicated by their requirements or likes and there are intermittent classes in school just for the instructors. Be that as it may, 21st century, each individual in the school has a consistent enhancement plan for scholastic and individual expertise inserted into the administration framework and as a section they are identified with the school business improvement plan.

Job of the educator: Before the instructors are the primary source to make the educational modules advancement. However, long lasting learning it is protested include human asset by taking advantage of aptitudes, abilities and information. Every one of the guardians and the network make bunches of investigating asset, for building up the school network.

Educational programs: Both twentieth and 21st hundreds of years is the educational programs depend on discrete subjects and they are appointed to biased the ideas and making the outcomes. Be that as it may, 21st century depends on the aptitude, abilities and learning, the upgrade of confidence and the acknowledgment of deep rooted qualities.

Bolster administrations: In the twentieth century educators had many work to do whether individual or cooperation for learning and social issues. Be that as it may, the new arrangement of 21st century has the directing frameworks are accessible for all learners and their families. In the event that you take in the individual learning direction framework for all people groups ought to be utilized in the school network. The family and the network must be associated with the framework.

Assessment: In the twentieth century the directed test and gave the outcome, in view of the outcome they Promote the youngsters from a review to another review yet 21st century it looks contradistinction on the grounds that the understudy needs to test the innovation world and ability full life learning. It is better comprehension of various races, statements of faith, and societies. with the end goal to improve the resilience and comprehension all through school.

b. 21st century core skills:

There are three importance skill for 21st century.

a. Learning and advancement expertise: figuring out how to make together.

It is center around basic learning aptitudes and advancement. It is including three stages, basic reasoning and critical thinking, correspondence and joint effort, and imagination and advancement. It is for the most part forever learning and innovative work. The world requests more inventive and development individuals, so the first and the aptitudes are critical for testing the universes needs. Who offers his item in new strategy every one of the general population pursue the equivalent so with the end goal to make the learning we should be the trend-setter and basic mastermind. For reasons unknown,

utilizing information's it is being gotten the hang of applying aptitudes like basic reasoning, critical thinking, and imagination to the substance learning expands inspirations and enhances learning results. In each subject, at each review level. Guidance and learning must incorporate pledge to an information center, levels of popularity on considering, and dynamic utilization of information. By 'Scientific categorization for learning' Knowledge, appreciation, application, investigation, lastly assessment. Those means are imperative for understudy learning. Be that as it may, new form goes recall, apply, break down, assess, and make. The aptitudes are created most viably through important learning.

b. Digital education aptitudes: Info-Savvy, Media-familiar, Tech-Tuned.

When you request that the understudy read the content and aske the inquiry now days isn't conceivable to do, in light of the fact that they require diverse shape instructing and learning methods. Along these lines, they pursue three stages, data proficiency, Media education, and ICT (Information and correspondence innovation). Data proficiency and familiarity should rise. regardless of whether at work, in school, at home, or in the network, there will expand requests on our capacity to, survey data productively and adequately, assess data fundamentally and capability, and utilize data precisely and imaginatively. Surveying, assessing, applying, and overseeing data well, and utilizing data sources properly and adequately, are only some of the aptitudes that characterize 21st century computerized proficiency. Media proficiency is the setting alludes to the mode of conveying message, (print, realistic, liveliness, sound, video, sites, et cetera) which media needs to convey the message in the right place. ICT is utilized in universal dimension for the understudies and the instructors. They are generally basic dealing with our consistently extending instruments sets of data.

c. Career and fundamental abilities: Work-prepared, Prepared forever.

The supervisor may utilize set of execution assessment criteria, a typical practice in many businesses today, that incorporates both work results and ability evaluations. Adaptability and versatility are presently fundamental aptitudes for learning, work, citizenship in the 21st century. The capacity to capable, for example, moving to a radical better approach for taking a gander at the current issue can make the surprising advantageous for you, bringing about remarkably imaginative arrangements and genuine advancements that can help take care of the 21st century demand for crisp thoughts an instructor Requirement and methodologies.

c. Characteristics of 21st century K-12 schools:

The future principle and normal for instructors must be seen inside the casing work of the focal place educators involve in instruction and preparing. The suggestion for the job and the normal for the instructors and their associations will likewise shift. The initial step is concerns the connecting among introductory and constant educator preparing, necessity and profession advancement. The second arrangement of elements influencing future instructor's capacities concerns pay rates and different

materials benefits. Third arrangement of factors which go to the core of the instructors' future job and capacity concerns the conditions for viable educating and getting the hang of, working condition. A fourth arrangement of factors running like a repeating theme through the others is the degree to which educators and their associations will take part in instructive basic leadership, through counsels and aggregate dealing. Regard the all-inclusive rights set out the worldwide benchmarks is a foundation of a majority rule society. We ought to receive in the instructive frameworks of tomorrow.

2) K-12 MATHEMATICS EDUCATION

A significant number of the understudy have the dread to enlisting in material science, science, and Mathematics of the optional school level. The teachers have the profundity learning about the science subject and instructing ability. Taking care of an issue implies finding an exit from a trouble, a route around an obstruction, achieving a point which was not quickly feasible. The point of the work this work is to comprehend this movement, to reason intends to show it, and enhance the critical thinking capacity of the understudy. Every one of the thoughts cannot have any significant bearing in one issue but rather it is the way to consider the example and the best approach to discover the arrangement. We cannot recollect every one of the means but rather we know the equation or half advance the appropriate response yet without perplexed you have to practice and figure out how to do it in right way. Be that as it may, all the scientific don't have equation some of them have work so non numerical issues at whatever point conceivable to do you can do it. The individuals who takes arithmetic in higher optional dimension they need to well plan since all the idea has concrete so the educators need to clarify in down to earth way. The instructors' educational modules should account for imaginative work on a fitting dimension. It is endeavored to give open door for such work by directing courses, in critical thinking.

a. K-12 mathematics teaching and learning activities:

Learning exercises apparatus are calculator, computers, web looks, social importance, estimation, manipulative, scientific association, mental science, portfolio evaluation, and critical thinking. The point instructing is to be particular, it is worried about secondary school educational modules and have an antiquated thought regarding its point, above all else, it should show those youngsters to think. Educating to think, you go to ground level and look their troubles and concoct new plan to instruct them. Make the understudy to deduction for reason, deliberate reasoning, gainful reasoning, and formal reasoning. The instructors know about the topic, strategies, and educational programs consider. Topic is extremely poor in our secondary school science instructor; they are in normal dimension. A few educators don't have the subject information yet they have distinctive style to clarify the substance, it isn't charge to instruct in higher optional dimension. An educator who gained whatever he knows in arithmetic absolutely individually can barely advance the dynamic learning of his understudy. Strategies are numerous however need to discover which is right yet nothing incorrectly to finding new techniques. Presently days the more youthful individuals are most energetic than our kindred instructors will take up these

inquiries some time or another and talk about them with a receptive outlook and demonstrate the first information. Educational modules contemplate is figured out how to make it. To start with, we have to comprehend the understudy level and set up the educational modules.

b. K-12 mathematics learning assessment:

Every one of the educators have multitudinous traps about their instructing ability. When you encourage something in reasonable way it won't be forgettable. Thus, a few educators attempt to work with on movement, it builds up the understudy basic reasoning and development technique. There steps we can tail it Active adapting, Best inspiration, and Consecutive stages. Dynamic learning isn't a strategy to pursue there is a lot of ways, yet the learning should dynamic, not only unsolved or open, it might be by perusing book or listening ton addresses, or taking a gander at moving pictures without including some activity of your own creative ability, you can't learn barely anything and surely you can learn much. Be that as it may, the most ideal approach to get the hang of anything is to disclosure it without anyone else, so it will keep long life learning. Best inspiration ought to be dynamic; we require invigorate the understudy to consider the specific point. Give some reward for their attempting, the student ought to be content with the action of learning. Back to back stages start with activity and discernment, continues from thereupon to words and ideas, and should end in alluring mental propensities.

c. 21st Century teaching, learning and assessment of Mathematics education:

The historical backdrop of assessing and testing human learning and capacities goes back to the start of chronicled record. Early estimations were fundamentally oral examination, for example, those utilized by Socrates. The appraisals are government sanctioned testing, National evaluation of instructive advancement, global examinations, state appraisal programs. It mirrors the science that all understudies need to know and have the capacity to do. Improve arithmetic learning. Advance the value. Be an open procedure. Advance legitimate derivation about science learning. Be an intelligent procedure.

3) TEACHER ROLES IN IMPROVING MATHEMATICS EDUCATION

In the event that you pick a school-based setting in which to work, you will never again be a called instructor since you will have the work area modules that move from place to put as required. Fundamentally, there will be two sorts of educators, the educational modules chooser-assess, and educational modules makers. The educational programs chooser-assess is the module instructor dependent on the school settings. This sort of educators are custom curriculum for these days. These educators are given by the educational programs and unit extends yet they work outside of the school. These educators don't think the understudies' advantages, so they drive each day to the school and they do their own work. It isn't the individual understudy benefits. The educational modules makers are well specialists and they realize how to manage understudies. The instructors are customized the educational modules. Generation instructors as they might

be called, will work outside the school settings. They are constantly refreshed.

a. Teacher roles for enhancing mathematics learning in schools:

The class instructor tended to were to some degree, strategies courses. They educator must utilize the aptitude dependent on the everyday schedule. The instructor's day by day assignment and on the educators mental attituded. The educator must be keen regarding his matters. Know the methods for learning, to find yourself and utilize it in the class. Give them data as well as know-how aptitudes of brain, the propensity for precise work. Take a gander at the highlights of the current issue as might be valuable in tackling the issues to come-attempt to uncover the general example that lies behind the present solid circumstances. Try not to give away your entire mystery on the double, let the understudies' surmises before you let it know, given them a chance to discover independent from anyone else as much as is possible. The push to make science all the more captivating and subsequently increment its take-up in auxiliary and tertiary investigations was not all around taken up in past change endeavors

b. Effective Math instructional methods for supporting K-12 students:

Successful methods for encouraging critical thinking includes procedures, other than techniques examined, to make understudies feel more great with the critical thinking background. Pick issues deliberately, giving careful consideration ton intrigue and trouble level. Every one of the understudies are not inspired by the educator so they are getting exhausting, insignificant, and excessively troublesome. Others educators do extraordinary occupation since they do word issue so they understudy likewise enthusiasm to learn effectively. Placed understudy in little gatherings and enable them to cooperate on critical thinking exercise. Distinguish needed, given, and required data. Needed data is the arrangement. Given data is the displayed in the issue. Required data is the data not introduced in the issue but rather required to explain it. Represent the issue so that understudies obviously comprehend what is anticipated from them. Present an extensive variety of issues. Present issues frequently. Give chances to understudy to take care of various issues with a similar methodology. Help understudies select a proper procedure for a specific issue. In the class the understudy pursues the assignments, talk, learning condition, and examination of educating and learning.

4) INSTRUCTIONAL LEADERSHIP COMPETENCIES OF K-12 MATH TEACHERS

In the examination writing, which has developed relentlessly since the mid-fifties, a refinement is made among initiative and "headship." Headship is said to comprise of administrative obligations done by somebody named, with practically zero collective information required and with no commitment required to a gathering procedure. As it were, the head's activity is generally confined; his or her choices are moderately unaffected by intrigue or inclinations other than his own. Initiative, then again, is depicted as power conceded with the desire of the

adherents. It is specialist promptly put resources into a believed individual and in this way qualifies as a sort of good and transformational control over the association. This is a spellbound hypothesis of initiative, obviously, and no uncertainty misrepresented: nobody is totally a "pioneer" or totally a "head". Be that as it may, it brings up two noteworthy actualities about the compelling principals considered in research on instructive administration.

a. Instructional leadership theory:

In 1995, Daresh and Playko composed the accompanying about "instructional initiative". Notwithstanding the measure of talk about, and also bolster for, the idea of instructional initiative, little has been done to characterize the idea operationally. We presently perceive that individual other than principals may participate in instructional initiative practices. Douglas Reeves, in the learning Leader (2006), offers a structure of "administration for learning" to support the individuals who are disheartened on the grounds that it gives particular direction to the most troublesome school, and it will test careless schools to various between being successful and being fortunate. The meaning of administration in writing has been extremely differing. For the most part, administration is characterized regarding characteristics, practices, jobs, and procedures. "Analysts as a rule characterize administration as per their individual points of view and the parts of the wonder of most enthusiasm to them" blends of definitions, "mirror the supposition that includes procedure whereby deliberate impact is applied by one individual over other individuals to guide, structure and encourage exercises and connections in a gathering or association" Said in another way attest that "authority ought to be characterized extensively as a social procedure in which an individual from a gathering or association impacts the elucidation of inward and outside occasions, the selection of objectives or wanted results, association of work exercises, singular inspiration and capacities, control relations, and shared introductions".

b. Instructional leadership competencies of K-12 Mathematics teachers

People communicate most fluently through their actions, not their words. – Association of supervision and curriculum Development (1998, p.83). Leadership style itself is very much determined by communication style, which consists of a unique blend of how a person listens, speaks, writes, and uses body language. Although there are fundamental skills involved in communication, each of us has our unique approach to it, which forms the essence of our personality. Instructional leadership as the locus of faculty leadership for ensuring faculty competent professional practice and student performance. A site-based school improvement project that involves the entire faculty. Peer coaching, wherein teachers observe each other and provide feedback on the efficiency of instruction.

CONCLUSION

The greatest reflections of the change in the twenty-first century, without doubt all the institutions will well-qualified for the new age. The concepts that form the traditional education are turned upside down in the information society. The production and use of valid information, which will be a source of wealth, have accordingly loaded new responsibilities to both educational system and school. Compulsory education should have the qualities of preparing students for a lifelong learning and develop their skills of self-learning. The most important behaviors that students are expected to acquire in schools is lifelong learning.

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