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Application of Howard Gardner’s Multiple Intelligence Theory for the Effective Use of Library Resources by K-2 Students: An Experimented Model

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Abstract

How can school libraries and librarians be apart of the culture of promoting books and reading? Can we go beyond organizing author talks, book fairs, book presentations etc.? Can we target the Kindergarteners and the primary school students and do some experiment to inculcate this virtue called Reading? An effort has been made in this direction and be considered successful to a great extent by the author in her school Zyodus School for Excellence, Ahmedabad, India where she has been working for the last four years.

This paper provides a viewpoint of applying Dr. Howard Gardner’s Theory of Multiple Intelligences namely, verbal/linguistic, logico-mathematical, musical, body/kinesthetic, visual/spatial, interpersonal, intrapersonal and naturalist intelligence in evaluating a resource by a student. This process can help a great deal in overall development of a child’s/students personality. The approach used here is the practical application of Multiple Intelligence Theory in evaluating a resource by students of K-2 students. The student selects a particular resource and checks whether all the above mentioned intelligences developing activities are available in the resource. If at least 4-5 such activities are available, the student can take home the resource and share it with his/her parents. Then an effort is made to collect the feedback from parents as to how the child and the parent utilized the resources effectively and what was the learning outcome. Based on the feedback, the child can be reinforced to choose the right resources.

Since this exercise involves both children and parents and is structured in approach, there has been an observation that they look forward for the library periods in the school quite enthusiastically. The author is of the opinion that Multiple Intelligence Theory helps in developing skills to analyze a resource logically & use it effectively to increase the success level of the students.

Introduction

Every parent's desire to put their children on the way to excellent education starts with the school. So, school is the second home where children get the opportunity to develop their personality (1). All the necessary social and professional skills are developed in school. Development of these skills takes place through learning & thinking activities. So, a school that has the potential to provide education on thinking and learning skills determines the achievement and satisfaction of the students and parents. It is well known fact that school libraries play a prominent role in the promotion of learning activities. In fact, a good library determines the quality of a school. The modern concept of the school library/resource centre is that, it is the focal point of education in a school. It is the principle source of information for students.

Coming to the other part of the children's personality – the role of teachers/educators, a silent resentment on this role aspect is observed in recent times. Truly speaking, teachers have been revered in India since ages. But of late, they have been criticized for many drawbacks of the education system. It may be due to the out dated teaching methodologies that are dominant in many schools. Teachers are often not aware of current trends in learning and instructional psychology. It may be due to overwork, unjust teacher student ratio in many schools & lack of proper incentives etc. These and many other reasons, result in the teachers being targeted. In order to keep pace with the 21st century demands of educating school children, the quality of teachers' education needs much improvement. Apart from this, other educators like the librarian can step in and make a difference in the education system which in turn will have a positive bearing on a child's personality.

How can a school library and the librarian make a difference in the child's academic chart? This can be assessed primarily by examining their role.

Role of School Libraries

Considering school libraries act as an inter-link between the students and resources, the major roles can be mentioned:

- Reading is believed to be a virtue rather than a habit and it begins and develops at the school library. This virtue helps every student to become a responsible human being.
- Support and add on to the teaching process as required by the curriculum, as schools today rely heavily on the resources in their libraries to develop creativity and reasoning skills in young students.
- Instill in students the advantages of self learning and help to sustain it lifelong and hence school libraries are considered as the stepping stone to intellectual and academic career of the students.
- Introduce Information Literacy and related activities for better usage of the resources.
- Act as gateways to loads of information and thereby help the students create new knowledge.

Role of School Librarian

The changing role of a school librarian in India has seen the issue of individuality and diversity being addressed. The librarian today, plays a pivotal role:

- By collaborating with teachers to plan and assess instructional units that incorporate many different resources and acknowledge varied teaching and learning styles.

- Develops, teaches and assesses instructional activities that help students in many ways.
- Has a major say in the library management and policy decisions.
- Assists students in analyzing information needs and help them locate, evaluate and use such information resources and further is to apply the information to generate new information.
- By being more focused in work and professional in approach.

Having examined the roles of the library and the librarian it is better to concentrate on various measures which promote the maximum use of resources and thereby the overall performance of the school.

Measures to Increase the School Library/Resources Usage

Keeping in view the Fourth law of library science 'Save the time of reader' as enunciated by Dr. S.R. Raganathan, it is better to provide the sound infrastructure to house the resources and to create congenial atmosphere to attract the students and teachers. National standards for school libraries have to be set to bring in uniformity in the services provided. Automation of the library activities and user friendly access to the electronic resources be facilitated. Teachers and other educators be properly oriented as to how they can make use of the various resources available in the library to supplement their classroom teaching and how they can motivate individual learning among students to understand and perform better. Since, Information Literacy is becoming the foundation of lifelong learning, it is helping students to push the envelope a little further and become more self directed learners. Further, they will be initiated to judge the relevance of the information and use it for their developments and have control over their learning by inducing them to collect, analyze and recreate new information for the good of others.

Having outlined the various avenues of increasing school library/resources usage, it is essential to plan for the information literacy activities and make efforts to design and develop the standards and guidelines to suit Indian school library context.

Information Literacy Activities in Indian School Libraries

Owing to information explosion and technology enabled easy access to it, some school libraries in India are now keen in exploring their roles and keep their students to become information literate with variety of information resources. Librarians are helping students to understand the available resources and using the knowledge gained to create new knowledge. Similarly teachers are now creating space that encourages students to learn more about a topic or solve a problem using information resources located at their school libraries. Librarians are now involving themselves in the teaching process by taking classes to teach the students as how to use a specific resource but first and foremost they are ensuring access to an array of resources.

All this is focused on the secondary and high school students and their needs and requirements. But if the same thing had to be done at the kindergarten or the primary level, how would one go about it? Here is an attempt to do so.

Theory of Multiple Intelligences (MI)

Dr. Howard Gardner a professor of education and coordinator of project Zero at Harvard University, challenged the traditional notion that intelligence is a single capacity possessed by every individual to a greater or lesser extent. Armed with research evidence, Gardner presents the idea of existence of a number of intelligences

that result in a unique cognitive profile for each individual. This extraordinary conception of individual competence is changing the face of education today. Many educators and researchers have explored the practical implications of Multiple Intelligence theory- the powerful notion that there are separate human capacities.

According to this theory, human cognitive competence is better described in terms of a set of abilities, talents or mental skills called intelligences. All normal individuals possess each of these skills to some extent; individuals differ in the degree of skill and in the nature of their combination. Dr Gardner is of the view that such a theory has important educational implications including ones for curriculum development.

While empirical evidence backs Multiple Intelligence Theory, it has not been targeted to severe experimental tests within psychology. But the application of the theory in various fields of education is currently being examined. Gardner and his team opine that their leads will have to be revised repeatedly in light of actual classroom experience. Yet they believe there are positive reasons for considering the theory of Multiple Intelligence and its implications for education. To start with it is clear that many talents if not intelligences are neglected these days. Secondly, individuals of such talents are victims of single minded or single focused approach to the mind. Lastly, this world is troubled with many problems. Any opportunity to solve them can be made by making the best use of intelligences we possess. Therefore, recognizing the plurality of intelligences and the manifold ways in which human individual may exhibit them is an important step.

This opinion of the theory prompted the author to take up this concept and apply it to the evaluation of resources at the primary level. Since school library plays a crucial role in a child's reading development, the librarian becomes the promoter who guides the children as well as parents and collaborates with the teachers to take up various activities contained in each and every resource by stimulating these intelligences.

To become familiar with this theory, a brief introduction of each intelligence is given below.

Verbal-Linguistic Intelligence

The gift of language is universal and its development in children is constant across cultures. A special area of the brain is responsible for the production of grammatical sentences. Some characteristics of this intelligence can be identified by an individual's choice to process information through language. Sensitiveness to meaning, order, sound of words is noticed. They like to explain, persuade and also enjoy listening to or reading stories etc. they also have good memory recall for names and dates.

Logico-Mathematical Intelligence

Along with the skill of language, logical-mathematical reasoning provides the main foundation for IQ tests. Certain areas of the brain are more prominent in mathematical calculation than others. A solution to a problem can be constructed before it is articulated. Analyzing, grouping, categorizing, recognizing relationships, creating order out of chaos, reasoning, predicting, etc. are the main characteristics of this intelligence.

Musical Intelligence

Music is a universal faculty. Studies of infant development suggest that there is a raw computational ability in early childhood. Certain parts of the brain play important roles in perception and production of music. These areas are characteristically located

in the right hemisphere. Features of this intelligence indicate that learning takes place through sound, rhythm and musical metaphor. The individuals have well developed auditory sense and are able to distinguish pitch, tone, rhythmic patterns.

Visual/Spatial Intelligence

Spatial problem solving is bought to bear in visualizing an object, seen from a different angle and in playing chess. The visual arts also employ this intelligence in the use of space. Evidence from the brain research is clear and persuasive. Just as the left hemisphere has over the course of evaluation, been selected as the site of linguistic processing in right handed persons, the right hemisphere proves to be the site most crucial for spatial processing. Distinct characteristics of this intelligence are a sense of direction, thinking and planning in three dimensions. Individuals can create complex mental images and are able to see physical world accurately and translate into new forms. They are able to see things in relationship to others.

Body/Kinesthetic Intelligence

Control of bodily movement is localized in the motor cortex, with each hemisphere dominant or controlling bodily movements in the contra-lateral side. The evolution of specialized body movements is of obvious advantage to the species and in human this adaptation is extended through the use of tools. Body movement undergoes a clearly defined developmental schedule in children. The ability to use ones body to express an emotion, to play a game or to create a new product is an evidence of the cognitive features of body usage. Specific characteristics of this intelligence develops fine and gross motor skills experiences strong body-mind connection, expands awareness through body, etc.

Interpersonal Intelligence

Interpersonal intelligence builds on a core capacity to notice distinction among others. In particular contrast in their moods and temperaments, motivations and intentions. This intelligence also permits a skilled adult to read the intentions and desires of others even when these have been hidden. In this intelligence, processing of information is done through relatedness to others. An ability to notice people's moods, temperaments, ability to understand intentions, behaviour and perspective, ability to respond to verbal and non verbal facial clues and to negotiate and handle conflict resolutions is noticed. Individuals work well with diverse group of people and have good communication skills.

Intrapersonal Intelligence

It is the knowledge of the internal aspects of a person : access to one's own feeling, life, one's range of emotions, the capacity to effect discriminations among these emotions and eventually to level them and to draw upon them as a means of understanding and guiding one's own behaviour. A person with good intrapersonal intelligence has a viable and effective model of himself or herself. Interpersonal intelligence allows one to understand and work with others, intrapersonal intelligence allows one to understand and work with one self. Main characteristics is that, the individuals have very strong senses of themselves, their wants and needs. They are self reflective and in touch with themselves, excellent self planners & good at goal setting. They have good understanding of strengths and weaknesses and enjoy self discovery.

So can these intelligences in each individual/child be utilized to evaluate a library resource or inversely can a library resource help in developing these intelligences? This is what the author has tried in her school which has yielded some positive results.

Applying Multiple Intelligence Theory to Evaluate Library Resources

In this part of the paper, an attempt is made to understand the implications of Multiple Intelligence Theory for schools and school libraries. By concentrating exclusively on the verbal and mathematical intelligences, schools have neglected to identify the abilities of many students. Another main point to be taken note is that, by neglecting the other important abilities they are depriving all the students the opportunity to increase their strengths and improve in the areas where they are weaker. Dr Gardner puts it as 'children possess a combination of intelligences and they are capable of growth in all areas'. As research says many teachers have restructured the curriculum and put the intelligences to work in their classrooms and one such teacher Kristen Nelson who has developed a unit that introduces the concept of multiple abilities and has created learning centers that allow the children to explore the different intelligences is of the opinion that "the biggest impact that the Multiple Intelligences Theory has had in my classroom is that it has helped me create an individualized learning environment'. She claims that even the youngest children understand that there are different ways of being smart.

Similarly if we as librarians can catch this concept right and try to introduce the resources and how to choose each resource by applying MI theory, then we will have moved a little closer to our universal mission of helping each child become a literate life long learner.

A Brief Profile of Zydus School for Excellence

Zydus School for Excellence where the author has been working for the last four years, has been set up under the aegis of Ramanbhai Foundation and is supported by one of India's leading healthcare groups viz. Zydus Cadila. Zydus School for Excellence is a comprehensive school that aims to provide each student, regardless of ability, with the opportunity to develop his or her full potential. It seeks to create an environment for teaching and learning in which each person is esteemed as an unique individual and to build a community within which each is free to grow in relationship to others. The curriculum provides all students with a series of educational experiences that will form the basis for further development. The aim is to provide a supportive learning environment, which values the uniqueness of each student's experiences and abilities.

The library is commonly called as the Resource Centre and it is regarded as the heart of Zydus School of Excellence. Its role is to support and promote educational goals as outlined in the school's mission and curriculum and the Mission is to enable students and teachers to effectively use information and facilitate them to become life long learners. It is the commitment of the management, teachers and the librarian, to make the Resource Centre as a role model for other schools in the city and all over India. In every respect, it should emerge as the best example in shaping a child's overall personality. Library hours are introduced both at the Pre-Primary and Primary levels with the motive that the children find themselves comfortable in the library and enjoy a less formal atmosphere. In the relaxed surroundings of the library they develop good learning habits which will stay with them for their lifetime. Basically, the collection and services cater to the needs of the students as well as the teachers.

Consistent and constant efforts are made by the librarian to structure of each library period and method of conducting library periods.

The Resource Centre is housed in two different wings – one meant for the students/teachers of Junior classes is located near the Pre-Primary section and the other meant for the senior classes is located in the centre. Books/Magazines/CD-ROMs are issued for students of classes VIII - X and only books and magazines for students of classes Jr KG to class VII for a duration of one week. There is the option of renewing the resources for the duration of one more week. At least one book sharing is done by the librarian every week in the pre-primary and primary classes and one activity based on the resources is done once a month. The resources issued are a combination of fiction and nonfiction and most of the books issued are such that they stimulate the seven intelligences in one way or the other. Whatever may be the set of resources that is being issued, the children are taught how to identify and evaluate it for optimum use, using multiple intelligence characteristics. Since the library is open for access for parent members also, a lot of interaction takes place and guidance is given to the parents as to how to use the resources for maximum benefit. Taking regular feed back from the parents and teachers on the child's performance in academics as well as conducting in the society helps us in promoting the usage of the resources and build a strong collection. It is noticed that a successful partnership has been established between the Library staff, parents and children to encourage reading, books and making use of this to perform well in their academics.

Experimented Model

Coming to the sequential flow of the whole exercise, as the academic year begins, the first 3-4 library periods are utilized in making the children familiar with the concept of books, library and reading. Once the children get the hang of it, the issuing process begins. Since the library periods are structured, before the start of each library period, the resources that are going to be issued are introduced to the students. While introducing the resources, the questions like why the particular series has been chosen to be issued, how it has to be used and how to really choose the resources are asked.

Since the target group is K-2 students, certain criteria or factors were kept in mind while keeping aside the books for being issued. These factors are:

- Resources chosen invariably have pictures in them.
- They are colourful and appealing.
- The font size and clarity of letters is right.
- Single words, simple sentences and small paragraphs are the be criteria for easy reading
- The same series or set of books is not repeated often.
- Total freedom is given to choose the book of their choice from the set that has been laid out for issuing.
- Opinion about liking and disliking a certain series or book is carefully noted and further action is taken in this regard.

The evaluation begins with the librarian getting involved and chooses one resource from the pile that has been kept ready for issuing. The pre-chosen book is held in hand and started with a series of questions which satisfy various intelligences and are listed below under various intelligent headings.

Verbal-linguistic ability

- Identifying the bold letters in the title

- Recognize the letters of the alphabet in the title.
- Can you identify the various characters in the picture?
- Identify the living characters which you can locate.
- Name the non living things that are visible.
- Whether it is an uppercase or a lower case letter?
- This involves the verbal /linguistic ability as the child tries to locate and identify, and
- Recognize the letters of the alphabet, various characters and recollect the names of the things.

Logico-mathematical ability

- What shape is the book?
- Whether it is big or small? Thick or thin?
- What are the total number of pages? etc.
- How many times a letter is repeated in a word?
- How many times a word is repeated in the book?

Here the concepts of size, shape, numbers, counting etc. come in and answering these questions helps in stimulating the mathematical & logical ability.

Musical ability

Every page of the book/resource involves one of the activities which will stimulate the child's intelligences. Once the child learns to read the pictures, he /she can be asked to identify the rhyming words in the picture like those things which make different sound etc.

These activities may appeal to those children who are musically inclined and may take the lead to take a book where many such exercises can be done.

Visual/Spatial ability

Taking this process a step further, the child can be asked:

- To visualize themselves in the story.
- What might have happened earlier even before the story begins?
- What might happen after the end of the story?

To answer these questions the child will have to utilize his/her visual / spatial intelligence.

Body/Kinesthetic ability

Some children are good at observing keenly the pictures & try to role play or do try certain actions indicated in the picture which involves body/ kinesthetic intelligence.

So questions like:

- Who would like to ride a horse like this Prince in the picture?
- Who would like to dance with Snow White and the seven dwarfs?

Takers for such question will be more interested in taking books which stimulate such intelligence.

Intrapersonal/Interpersonal abilities

- Identifying the names of each thing /character.
- What is the relationship of the thing to the living thing? (like Raghu's red ball).
- What each character may be saying to the other? (like what is mummy saying to Rinku).

- If you got a chance to meet Cinderella's step-sisters then what would you say to them?

This involves the child's interpersonal ability and also intrapersonal ability.

When a child get used to this exercise of evaluating a resource, be it a story book or an informational book, it is assured that every resource is made well use of by the child for his /her personal development. This process will help a child in utilizing the same technique for his curricular development and thereby make better use of the library resources for his academic backed activities projects, assignments, etc. Also this whole process involves the child totally and helps in interpreting things in a simpler way and thereby develop all their mental abilities without any pressure.

Conclusion

As the concentration was mainly on the pre-primary and primary level while experimenting this model to evaluate resources, the target group being the largest in the school (360 students) showed increased interest in coming to the library and were excited about issuing books to take home and go through various books during the library period itself. Interestingly both fiction and non-fiction are sought after and therefore are used to the optimum level.

Since parents are also encouraged to take membership of the library, most member parents are highly motivated in taking interest in their children's reading habits and are excited with this logical method of evaluating a resource. This helps in ensuring high parental involvement in the child's progress. The positive feedback from the faculty regarding involvement in curriculum related research activities gives an idea about the factors as to which resources help or hinder academic development.

This is one form of Information Literacy practiced at the very grass root level and is cost effective because enough care is taken to promote all the resources that are acquired, are also put into use. In this way, the optimum use of the resources is achieved. The experimentation has evinced greater interest in parents, teachers and students and there is active support to continue this for the benefit of the total community.

To conclude, it can be said with certainty that, this whole exercise helps in stimulation of various faculties of the brain/intelligences and also the child's confidence level gets a boost since he/she can self evaluate a book and make the most of it. This results in increase in the student achievement level due to knowledge gain and application, which results from such evaluation.

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