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Starting Young- Instilling Research Skills through School Libraries

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Abstract

This article focuses on the impact that school libraries can have on the informational and research skills of an individual if utilised as proposed while working within the academic framework of the institution that they serve. The benefits of introducing high school students to the world of research and the structured approach to it is discussed in detail along with how it improves student performance as well as equipping them with the tools and techniques they will need as they move forward with confidence to higher education and the professional environment. The paper also visits in brief the research process that can be utilized at a beginner's level and the challenges school libraries continue to face in the path of establishing themselves as the linchpin of research projects / assignments in the institutions that they serve.

Keywords: School Libraries, Research Skills, School Education, Critical Thinking, Collaborative Learning.

Introduction

In order to equip students with abilities and competencies to face the challenges offered by a highly competitive world, guided inquiry plays a crucial role. With approximately 34 crore children enrolled, India has the largest system of school education in the world. Many initiatives have been taken from time to time to improve its quality and currency. To bridge the gap between the international and Indian systems of school education, we need to give much importance to research training at the very least from the high school level upwards. School librarians play a critical role in this regard by providing students with access to a wealth of information and different communication channels. In this information age school libraries as dynamic learning hubs mould students as skilled 21st-century learners. As an extremely useful life skill, research helps students to collect, analyze and churn out specific and relevant information. This in turn equips them to face the challenges they may encounter later during their higher education, career, and beyond. A strong foundation of research skills helps students to think critically, exercise their mind and intellect, and build knowledge beyond academics. School Libraries can play a vital role in a child's education by stimulating research skills thereby moulding him as a well-informed, knowledgeable and responsible global citizen.

Purpose and relevance of research

Research can be considered a complex skill that requires several subsidiary skills to support. But regardless of the career and age of a person, learning is a never-ending process. The quest for knowledge opens our horizons. If the seeds of knowledge quest are sowed into the young minds at a tender age, that will be an asset for them throughout their life. The relevance of research in our lives is many, a few key ones are highlighted below:

1. **Research inspires students to explore more.** In conventional classroom models, common questions starting with ‘What, When, How and Why’ are usually asked. Answers to such questions are most probably known to the teachers or can be found without much difficulty. However, research frequently entails difficult-to-answer questions. Students need to ponder on it individually or in groups and that makes the process exciting.
2. **Critical Thinking, Lateral Thinking, Analysis, Problem Solving, and Collaborative Learning** are benchmarks in a research study. As a result, students feel motivated and enthusiastic.
3. Research sows the seeds of **curiosity and life-long learning** impulses in our younger generation.
4. As a tool that prioritizes **learner autonomy**, research helps students to select the exact kind of information independently.
5. An **in-depth understanding of the subject and area of specialization** is acquired in this process. This helps students to develop better decision-making skills which play a vital role in their future education and career.
6. **Self-discipline, capability to take up initiatives, and out-of-box thinking** skills are developed in young minds through research.
7. Students learn the importance of **teamwork, time management, and appreciating the intellectual inputs from others**. Moreover, when they get actively involved in a group of like-minded people, their confidence too gets a boost.

In an age where information is exploding on all sides and its accessibility is unlimited, research skills enable one to **discern relevant and original information** from fake and misinformation.

Objective of the study:

The objective of this paper is to throw light on the importance of research skills in providing a strong foundation for the education of students in our country. The paper tries to examine how research training given during their school education helps them to get an awareness of various concepts and develops an interest in exploring the unexplored areas. As an educational and creative hub of every educational institution, it falls on the libraries to provide research training. School libraries play a crucial role in developing such skills by guiding students to conduct effective research by finding the latest and exact kind of information they need, analyzing it, and evolving new ideas, thus expanding their knowledge. The paper also reviews this aspect here.

Literature review:

Meerah, T. S. M., & Arsad, N. M. (2010) in their study *Developing research skills at secondary school* reports the experience of Malaysian schools students in the learning of research skills through project work. Their findings reveal that students found it very useful and interesting and gave them hands-on training in doing the research-oriented study. Thus the students from these schools got directly involved with the university's mission to improve the educational standards of the country.

According to *Hills and Richards (2013)*, developing collaborations between academics from various research topics within a subject is beneficial. As a result, research competencies are analyzed from different perspectives. The focus of their study was on areas that allow the development of academic competencies. This is an area that needs to be strengthened because it is essential for undergraduate students to be able to comprehend a variety of contents and to write with academic integrity and diligence.

The significance of integrating library instructions in the curricula was discussed as even as early as the 2000s as evident in the article *School Librarian as Teachers: Learning Outcomes and Evidence-Based Practice (2002, Todd)* in which he emphasises that the impact of school librarians on the academic performance and in the development of information literacy skills that is necessary for success in all content areas is of critical importance. His study makes an earnest attempt to advocate for the school librarians to more effectively engage with the school's teaching and learning roles.

In a research conducted to determine whether a program of instruction designed by the librarians to teach high school students information gathering and analyzing skills that could be useful to them as undergraduates, the author M. Elspeth Goodin (1991) concludes that they were able to utilize the research skills that they attained in high school effectively in their college projects. The author reiterates the need for libraries to consider themselves as 'full participants' in the overall educational program of the institution they serve.

El-Khayat's (2016) article *Librarians help high school students improve research skills*, throws light on the experiences she as an health science librarian at the University of Arizona had during her collaborations with K-12 students and teachers in the community. From the perspective of a health science librarian, she found that her intervention at grade level has often helped students in their research in health science-related research much more effectively as they come into the university environment well prepared for the educational challenges they inevitably face here.

Why is it imperative to develop research skills from the high school level?

As a life skill that enables students to think beyond academics and have a wider perspective about what they see and experience, research helps them to adapt and evolve. As mentioned above, with the vast number of sources available and the perils of fake news and media misrepresentation, students at a very young age need to be trained to have the necessary abilities to locate the information they seek. Students

can become better decision-makers and standouts who can persuasively present an argument - within or outside their school campus if they are taught to organize their research and carefully examine the facts they obtain.

A comparative study of the status of research skills training provided at the levels of high schools or higher secondary schools in India with that of other countries, glaringly reveals the need for a giant leap that we need to take in this direction. Owing to factors such as a lack of awareness about its importance, proper funding, and a severe shortage of persons who are in this field to motivate school students we see a terrible lack of research culture. The table below highlights just that:

Table1

	Spending on Research & Innovation (as % of GDP)	Researchers (per million inhabitants)	Total Patent Applications
India	0.65	156	53,627
China	2.00	1,089	1,400,661
USA	2.70	4,205	621,453
S.Korea	4.30	6,826	218,975

Sources: Economic Survey of India 2021; UNESCO Institute of Statistics 2021; World Intellectual Property Indicators 2020

<https://www.linkedin.com/pulse/why-high-school-students-should-consider-research-ramya-modukuri/>

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It is evident that we must concentrate on rebuilding and strengthening the existing pattern of research training on the basis of Indian knowledge systems by merging advanced science, technology, social science, contemporary art, and humanities that satisfy international standards. Fortunately the National Education Policy (NEP) 2020 envisions a strong research environment and establishes the groundwork for encouraging research and innovation from the school level onwards. Our country indeed has the massive potential to enrich the knowledge ecosystem. What we need to help improve it is to implement stringent rules, increase funding, concentrate on the quality of research rather than quantity, immobilize plagiarism and data duplication and concentrate on a new multidisciplinary model research system. This new model should emphasize laying the foundation from the high school level onwards so as to embark on curiosity and affinity towards quality research in young minds. The proposed National Research Foundation in NEP 2020 is a major step in this direction.

When we compare the schools functioning under various boards/curricula, it is evident that a significant lacuna in research training provided to students is seen in the schools following the national curriculum. While schools following international curricula like International Baccalaureate (IB) and Cambridge International Examinations (CIE) give much importance to research-oriented projects and studies, schools under the Central Board of Secondary Education (CBSE), Council for the Indian School Certificate Examinations (CISCE), and State Government educational boards give less focus on that area.

Table 2 gives a comparison between the learning patterns followed in schools under various boards in India.

Table 2

Board	CBSE	CISCE	State Boards	IB	CIE
Approach & syllabus	The syllabus more or less briefly consists of every essential topic as per the age of the students	Almost similar to CBSE but is in an expanded and detailed form	Importance to topics of State & local history, culture & heritage	The focus is to develop students as global citizens. Integrated form of learning is followed. Skill development in areas like art, humanities, critical thinking and problem solving is emphasised	Intended to prepare students to face future life and career. Students have the liberty to choose curriculum from a variety of subjects available. Language proficiency is also focussed
Teaching-learning mode	Lecture-and-memorisation style of instruction. Focus on research and analysis is limited	Focused on developing students' critical thinking skills. But the goal of instruction is thorough knowledge. Less focus on research type of instruction.	Mode of instruction is teacher-centred and limited syllabus pattern followed. Research pattern of study not used commonly	Goal is application and critical evaluation. Encourage students to ask questions until no further question is possible and reinforce the concepts well. Priority to research mode of instruction	Goal is application and critical evaluation. Encourage students to ask questions until no further question is possible and reinforce the concepts well. Research is given priority

Sources: <https://theswaddle.com/learning-education-boards/> copyright 2016, The Swaddle Team
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The content of the table reveals that international boards follow structured research and inquiry-based systems which leads to meaningful learning focused on the holistic development of students. Here the students are trained to have an independent mode of learning interacting actively with textbooks and other reference sources available online and offline. Library instruction is an integral part of this system where the emphasis is on thinking and encourages learning for life as opposed to learning for an exam as followed by the common Indian system. Schools following the national curricula need to emphasize a more detailed, flexible, and comprehensive system integrating the elements of research and inquiry, critical and analytical segments, creative and logical application of knowledge and components promoting universal brotherhood, harmony, and cultural pluralism without losing the charm of national integration, culture, values and heritage facets of the existing system. Library instruction should be given much thrust, as suggested by the new NEP 2020 to strengthen the research or inquiry-based learning culture in the national curricula.

Stages in the research process

In order to guide the successful conduction of research certain qualities in the scholar are desirable. A deep interest in a topic, critical and analytical thinking, flexibility, perseverance, patience, and coordination skills are to name a few.

Figure 1

Steps involved (guiding students through various stages)

Step 1:

- (a) Identifying the area of study and selecting a specific topic of interest
- (b) Formulating a plan & methodology

Step 2:

- (a) Find a mentor
- (b) Set a realistic timeline and stick to it

Step 3:

- (a) Locating right sources of information
- (b) Checking for the credibility of sources
- (c) Collection and organisation of data

Step 4:

- (a) Interpretation & analysis of data
- (b) Writing and editing the finding
- (c) Citing the sources

Step 5:

- (a) Proofreading
- (b) Presenting the findings
- (c) Publishing the research

Sources: www.futurelearn.com/info/courses/research-process/0/steps/71889,
<https://www.nhcc.edu/academics/library/doing-library-research/basic-steps-research-process>,
<https://blog.collegevine.com/a-guide-to-pursuing-research-projects-in-high-school/>

To instill interest for research in school children, teachers and library educators need to work in coherence with each other. A strong foundation and affinity for research

once laid will play a crucial role in the future education and career of our younger generation. Proper guidance and understanding of the steps shown above (Fig 3) for the successful completion of research projects is crucial. Structured training, if given right from the middle school or high school level, will enable our students to contribute meaningfully to the development of our nation in every sphere. Necessary skills to utilize the available library resources both off and online should be cultivated starting from the elementary school level. If library instructions are made mandatory and an integral part of their curriculum this kind of optimum utilization of library resources will be automatically inculcated in their academic habits.

Role of school libraries in fostering research

It is evident that contemporary schooling systems all over the world give much priority to fostering research skills in students. Therein comes the importance of exploring how much school libraries can partner in this. The part played by school libraries in India also needs to be examined in order to get a juxtaposition with the international scenario. Spending the primary school years encircled by books, reading materials, and other educational toys will create a positive impact on the progressive brain development of our kids. For the holistic development of students, library training in the areas of research, inquiry-based learning, information literacy, and ethical use of resources is highly significant.

Libraries can bolster the research skills of students in innumerable ways. For instance:

- School libraries can be a curiosity cabinet packed with resources that embark on the creativity, imagination and seek-find kind of mindset in children.
- Inquiry learning - Libraries can be good ecosystems for developing the questioning skills of students which is a key component in successful research.
- Libraries can promote inquiry learning with the help of innumerable resources available online and offline.
- Guided inquiry, another major element in research also can be accomplished with the expertise of a trained librarian. This enables in-depth learning and personal understanding to construct new knowledge.
- Librarians can encourage students to question their assumptions and to reconsider historical or standardized procedures.
- A dynamic school library environment can facilitate research by motivating learners through healthy discussions and debates.
- Libraries can encourage the exploration skills of students by prescribing the utilization of library resources in their project guidelines.
- Ethical use of information, citation methods, and avoiding plagiarism is another major area where school libraries can train students to embark on their research journey.
- Introduction of information literacy in the curriculum that can be delivered by trained librarians will help students be trained to locate, evaluate and use information properly from the vast resources and multiple communication

channels. This will also guide them on the usage of tools and techniques for searching and narrowing of research topics.

When we look into the field of research and development all over the world it is clear that the use of library resources is integral. No research, be it in higher education or other developmental scenarios, is complete without proper utilization of the library and its resources. This has been unequivocally proven and corroborated by the kingpins of school education in most developed nations. Figure 1 shows that schools in India are not investing much in promoting research skills in children. The importance of library instructions is also not given priority for developing the research skills of students. Dependency on Google searches and ambiguous knowledge on the use of true and reliable resources is rampant by students and scholars in most disciplines. It is high time that the School Education Boards in India prioritize research training as a core area in the school curriculum. The ultimate goal is to make research an intrinsic process that engages students and helps them take responsibility for their learning, rather than simply making them 'college and career ready'.

Challenges ahead

1. While globally the recognition of libraries and the role of librarians as a vital part of academic machinery lacks the value and position it rightly deserves, the world over though this mindset is changing gradually. Faculty now makes a conscious effort in collaborating with the school library for a more inclusive educational experience. India however has a far way to go in this aspect. While librarianship is constitutionally considered at par with teaching faculty, most librarians still find it challenging to assert their role and make significant contributions to the field of research and education.
2. Research skills are not considered an essential element for the overall development of school children in India. This perspective needs to change if we aim for a better future for our citizens who are well equipped to face the challenges of a highly competitive world.
3. Library instructions especially in the areas of research training, basics of Intellectual Property Rights, ethical use of resources, information & media literacy, inquiry-based learning, etc. should be made a mandatory part of the school curriculum. Currently, the school curriculum in India does not give enough emphasis on such aspects.
4. Generally, a good part of the school librarians in the country are typically assigned administrative tasks rather than academic obligations or teaching sessions. Unlike schools following international curricula like IB and CIE, no collaboration happens between librarians and teachers while imparting lessons in those schools following the national curriculum or working under different state governments. The loss of opportunities in taking advantage of a trained professional in guiding the students through research skills and other information-related literacies is at the very least criminal.

5. Most of the state-funded schools and to an extent the CBSE schools have subject teachers doubling as librarians. Therefore, the deficiency of a trained professional who can dedicate her / his skill set and time to deliver library instructions makes implementing any proposed research/reading skills training impossible. This happens mostly due to the lack of awareness in the management, principles, and other teaching staff regarding the role and duties of a librarian. Therefore educating the entire community about our role is vital.
6. With the pace of changes that are happening in the field of information and communication technology, it is imperative that librarians keep themselves up to date regarding the current trends in the field of Library and Information Sciences. Research methods, information literacy, and critical thinking are key areas that we constantly need to keep track of and ensure the users are delivering the right information. Professionally keeping oneself current is crucial.

Conclusion

Critically questioning the information one gets and being equipped to search, evaluate, analyze and use the information to create new knowledge is fundamental to the development of not only the nation but also an individual. Changing the long-held perception of libraries as an appendix of an institution, a unit that exists essentially for the accreditation purpose rather than being considered as a research-based nerve center of its academic community is the biggest challenge that the discipline as a whole needs to rise to. Statistics show that the country needs to invest heavily in its educational system not only financially but also intellectually, bringing in changing agents that will shake it up from its self-induced inertia to a more robust research-oriented, active and smart user community of information. NEP 2020 has effectively laid the foundation for such a tomorrow, and it now behooves us to ensure we keep the wheel churning.

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