

## DEVELOPING LIBRARY PROGRAMS TO YOUTH AND CHILDREN AWARENESS OF THE DEVELOPMENT OF SCIENCE AND TECHNOLOGY

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### ABSTRACT

*A library is always an interesting place to visit. Many things can be done in the library. With the rapid development of information technology, the roles of a librarian have now expanded – from library education to IT instruction, from browsing along the shelves to digital access tutorial. The roles will continue expanding along with the development of IT.*

*Along with the development of science and technology, libraries need to ensure that people – especially children and youth – are aware of the development. Therefore, libraries should have programs in making children and youth get knowledge. The programs may vary from inviting experts in science and technology; exhibiting new invention and technological products; science and technology contests in the library, etc. it should be noted as well that librarians need to show or remind people of the inventions in science and technology in the past.*

**Keywords:** children, library, computer, IT.

### ABSTRAK

*Perpustakaan adalah tempat yang selalu menarik untuk dikunjungi. Banyak hal dapat dilakukan di perpustakaan. Dengan perkembangan teknologi informasi yang cepat, pustakawan saat ini berperan semakin luas – dari sebagai pustakawan pendidik menjadi instruktur teknologi informasi, dari sekedar menyusuri rak-rak koleksi sampai pada tutorial akses koleksi digital. Peran ini akan terus meluas seiring dengan perkembangan teknologi informasi.*

*Sejalan dengan kemajuan di bidang ilmu pengetahuan dan teknologi, perpustakaan harus dapat memastikan bahwa masyarakat, terutama anak-anak dan remaja menyadari kemajuan yang terjadi. Oleh karenanya, perpustakaan perlu menyajikan program-program yang dapat mempermudah mereka dalam mendapatkan pengetahuan. Program-program tersebut mencakup antara lain mengundang para ahli di bidang ilmu pengetahuan dan teknologi, mengadakan pameran produk penemuan dan teknologi baru, menyelenggarakan kontes ilmu pengetahuan dan teknologi di perpustakaan, dan sebagainya. Pustakawan juga perlu menunjukkan atau mengingatkan kembali pada masyarakat akan para penemu di bidang ilmu pengetahuan dan teknologi di masa lampau.*

**Kata kunci :** anak-anak, perpustakaan, komputer, teknologi informasi

As we know, technology becomes more and more user-friendly and children's software nowadays proliferates. Therefore, young children's use of technology becomes more widespread. In this paper, what is meant by technology refers primarily to computer technology, although this can be extended to include related technology such as multimedia, telecommunication, etc.

Librarians should be aware of this condition and have to accommodate the needs of technology among children. In fact, the potential benefits of technology for young children's learning and development are well

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documented (Wright and Shade, 1994).

In public as well as school libraries it is better for librarians who work with children to make children aware with technology and technological development, be prepared to use technology with children, and always examine the impact of technology on children.

In relation to computer technology, Haugland and Shade (1994) state that we should also be aware that new software titles are not always good contributions to the field. In addition, the number of software for games is so many and they attract children to play with. So, librarians have to try to

review those software and direct children to appropriate software.

Librarians involved in children's activities must take part in introducing technology to the daily lives of children and families. In fact, this statement addresses several issues related to the use of technology with children:

- (1). The librarians' role in evaluating appropriate use of technology for children within a library and home.
- (2). The role of librarians and parents as guidance for understanding the use of technology
- (2). The benefits of appropriate uses of technology among children.
- (3). The integration of technology into the children's learning environment.
- (4). Equitable access to technology, including disabled children.
- (5). Stereotyping and violence in software for children.
- (7). The implications of technology for children's professional development.

Although some people fear that computer, for example, will cause children to change their habits, Clements (1994) points out the positive effects of technology on children's learning and development. He also indicates that, in practice, computers and other technologies are only supplement to the highly valued early childhood activities and materials, such books, exploration with writing materials, dramatic play etc. Technologies will never replace children's activities.

Another research done by Shade and Watson (1990) indicates that although computers can be misused, they can be used in developmentally appropriate ways beneficial to children. Therefore, adults should guide children to make benefit from computers and other technology in general in positive ways.

Indeed it is right to say that technology developed appropriately for children offers opportunities for collaborative learning and play.

Librarians must use professional judgment in evaluating and using this learning tool appropriately, applying the same criteria they would to any other learning tool or experience. They must also weight the costs of technology with the costs of other learning

materials and program resources to arrive at an appropriate balance for their libraries.

Concerning with the use of technology in libraries, the librarian has responsibility to ensure that good decisions are made about which technology to use and in supporting children to potentially maximize their use of technology. Librarians must take time, for example, to evaluate and choose software basing on principles of development and learning and must carefully observe children using technologies to identify both opportunities and problems and make appropriate adaptations.

In terms of computer and software, choosing appropriate software is similar to choosing appropriate books for the library – librarians constantly make judgments about what is age appropriate, individually appropriate, and culturally appropriate.

Librarians should look for ways to use technologies to support the development and learning that occur in other parts of the library and the development and learning that happen with technologies in complement with children's activities.

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Computers, for example, are intrinsically compelling for young children. The sounds and graphics gain children's attention. Increasingly, young children observe adults and older children

working on computers, and they also want to do it. Children get interested because they can make things happen with computers.

Software can be made age appropriate even for children as young as three or four.

Again, when used appropriately, technology can support and extend traditional materials in valuable ways.

Research points to the positive effects of technology in children's learning and development, both cognitive and social (Clements 1994; Haugland and Shade 1994). Observing the child at the computer offers librarians a "window" onto a child's thinking. Just as parents continue to read to children who can read themselves, parents and librarians should both participate with children in computer activities and encourage children to use computers on their own and with peers.

Unlike what some people fear of, research demonstrates that when working with a computer, children prefer working with one or two partners over working alone (Lipinski et al. 1986; Rhee & Chavmagri 1991; Clements, Nastasi and Swaminathan 1993).

Children engage in high level of spoken communication and cooperation at the computer. They initiate interactions more frequently and in different ways than when engaged with traditional activities, such as puzzles and blocks. They engage in more turn taking at the computer and simultaneously show high levels of language and cooperative-play activity.

Technology extends benefits of collaboration among children in the primary grades who can already read and write. With the potential of access to the internet or other on-line "user-friendly" networks, young children can collaborate with children in other areas, cities, counties, and even countries.

Through electronic "field trips" in real time or via diskette, children are able to share different cultural environment. Email and chatting through the internet facilities enable children to have direct communication and those facilities can promote social interactions previously limited by the physical location of participating learners.

Every library has its own guiding philosophies, values, schedules, themes, and activities. As part of the librarian's overall library plan, computers should be used in ways that support these existing library educational directions rather than distort or replace them.

Computers and other technological products should be integrated into early childhood practice physically, functionally, and philosophically. Librarians can accommodate integration in the following ways:

- locate computers in the children's services rather than in a separate computer room
- integrate technology into the daily routine of library activity. For example, a librarian might introduce musical rhythm with actions, recordings, and a computer used as an electronic rhythm-matching game. The children then would work in small groups with computer

program serving as one of several learning centers.

- Choose software to enrich children's knowledge or concepts. For example the program in the computer learning center might allow children to invent their own rhythms that they could simultaneously hear played back and see displayed graphically. They could edit these rhythms on the computer, hearing and seeing the changes.
- Use technology to integrate children's activities in the library. For example, one group of children use the computer to make signs for a restaurant in their dramatic-play area (Apple Computer Inc. 1993). The rhythm program helps children connect mathematical patterns to musical patterns.

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- Extend the children's activities, with technology offering new avenues and perspectives. For example, exploring shapes on the computer provides opportunities to stretch, shrink,

bend, and combine shapes into new forms. Such activities enrich and extend children's activities with physical manipulatives.

- Apart from computer technology, children should have a chance to see other technology and the invention of technology in the library – in this case, children may see the miniature of the invention or replica of the real technology – not just virtually through computer monitor.
- The birthdays of inventors can be the moments of informing children about the invention. The library can do some sort of celebration by showing books and miniature of the invention in the library.
- Ideally, the library should also have facilities to enable children practice to use the technological invention. For example, children may learn on how a fax machine work, how to send a message via cellular phone etc. by reading the instruction in a book and by practicing.
- The library can also hold contest using any technological product. For example, a library

may have a program of photo contest, in which children are encouraged to use digital cameras or cell phone with camera and take pictures of the library.

Nowadays libraries do not only keep books and reading materials. They have facilities that enable users to access remotely digital materials and practice what they get from reading materials. Therefore, efforts should be made to ensure access to appropriate technology for children. Technology such as computers can be a powerful compensatory tool as computers can augment sensory input or reduce distractions. They can also provide support for cognitive processing or enhance memory and recall. It can also serve as a personal "on-demand" tutor and as an enabling device that supports independent functioning.

The variety of assistive-technology products ranges from low-tech toys with simple switches to expansive high-tech systems capable of managing complex environments. These technologies empower young children and increase their independence. With adapted materials, young children with disabilities no longer have to be excluded from activities. Using appropriately designed and supported computer applications, the ability to learn, move, communicate, and recreate are within the reach of all learners.

With all these enhanced capabilities, this technology requires thoughtful integration into early childhood curriculum, or it may fall short of its promise. Librarians must match the technology to each child's unique special needs, learning styles, and individual preferences.

Librarians should actively select software and other technological products that promotes positive social values and, in collaboration with parents, should also advocate for more appropriate technology applications for all children. Librarians should also actively prepare what technological advancement should be exhibited in the library at a time and change it regularly.

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