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Professional self-efficacy and role perception of school librarians and their impact on the development of students' information literacy: an evidence-based study

Ruth Ash-Argyle, Library Director, The Leo Baeck Education Centre, Israel. Email: ashruth3@gmail.com

Snunith Shoham, Chair, Department of Information Science, Bar Ilan University, Israel. Email: shoham.snunith2@gmail.com

Abstract

The current study evaluated the degree to which school librarians are involved in two different dimensions of their work that directly relate to developing information literacy (IL): (1) providing students with basic and advanced reference work services (RWS); and (2) assisting students at different stages of their research process assignments, as defined by the Big6 model. In addition, to examine factors that may affect the degree of involvement in these two dimensions, the professional self-efficacy of the librarians and their perceptions of their role within the school community were assessed. Data was collected from 71 Israeli school librarians through online questionnaires and analysed quantitatively. This analysis reveals that school librarians provide primarily basic RWS, which require a low degree of professional and technological skills and little collaboration with school teachers. Similarly, school librarians are mainly involved with two specific stages of the students' research processes, namely, the seeking and evaluation of information, which again reflect a low degree of IL training. The degree of involvement of librarians in these dimensions of their work is significantly and positively correlated with (a) the perception of the librarians of their own self-learning ability and professional updating level; and (b) their perceptions of their role as co-teachers or leaders within the school community. These findings should increase the awareness of the IL community to the work of school librarians, to their role in shaping information-related processes in young students, and to possible means of achieving these goals.

Keywords

school librarians; primary schools; high schools; elementary schools; secondary schools; reference work; Big6; research processes; information literacy; students; professional self-efficacy; continuing professional development; role perception; Israel.

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1. Introduction

The accelerated technological changes of the 21st century, and the resulting demands for higher information literacy (IL) skills, pose similar challenges for academic and school libraries alike. However, the degree to which librarians are actively involved in developing the IL of library users has been studied mostly in academic libraries (e.g., Fritch and Mandernack 2001; Cook 2006) and to a significantly lesser extent in school libraries (Streatfield et al. 2011). Moreover, previous studies indicated that, despite their potential role as lead educators of IL

skills in the school community, school librarians tend to be invisible to students, teachers and headteachers (also known as principals); this, in turn, reduces their effectiveness as educators and hinders collaborations with teachers (Dorwell and Lawson 1995; Hartzell 1997; Hartzell 2002; Oberg 2006). The current study examined the degree to which school librarians in Israel provide different levels of reference work services (RWS) and the degree to which they are involved in different stages of research processes (RPs) of the students at school, as indicators to their involvement in effectively imparting IL skills. Importantly, to extend existing literature and highlight factors that may improve the involvement of school librarians in developing students' IL, correlations between these two main indicators and the professional self-efficacy of the librarians and their perceptions of their own role within the school community, were also evaluated.

1.1 The 21st century school librarian

With the digitisation of information and the integration of computer networks and the internet, school librarians today are expected to adapt to the new technological era. The school librarian is thus expected to act as an IL leader within the school community and meet contemporary information demands (Pickard 1993; Canadian Association for School Libraries 1997; UNESCO 1998; American Association of School Librarians and the Association for Educational Communications and Technology 1998a; Branch and Oberg 2001; School Library Association of South Australia 2003; Oberg 2009). Most importantly, within the school boundaries, librarians are required to collaborate with other school entities (e.g., teachers and headteachers) to teach, train, and improve skills and strategies that may be relevant for students in the 21st century (Darrow 2007; Taylor and Woolls 2010). These skills include, to name a few: IL and research process skills; critical thinking abilities; the ability to construct knowledge; formulate conclusions and share knowledge in accordance with the ethical guidelines of a democratic society; and the drive to achieve personal growth (American Association of School Librarians and Association for Educational Communications and Technology 1998a).

Because the contemporary school library and the librarians working therein provide users with both information sources and learning tools, they have become a crucial component in the development of IL and learning skills of the students (Kuhlthau 2004; Hay 2005; Lance 2010). This role is especially important in the light of some concerns raised recently of the deficits that students exhibit in searching and critically evaluating information. For instance, some studies indicate that high-school students show difficulties in assessing the reliability and objectivity of information, and a clear preference towards internet-based and other digital resources over printed material; students today demonstrate low searching capabilities with respect to choosing search keywords, evaluating sites and appropriate citing of information resources; they lack the ability to assess the credibility of internet sites; and they demonstrate low-level thinking with regard to determining the accuracy and credibility of information (Shenton and Dixon 2004). In addition, it has been shown that biology students in high schools read scientific articles superficially, and that many students search for the “correct” answer and tend to determine the relevancy of information based on convenience (Julien and Barker 2009). Students thus exert minimal effort with regard to research and show a clear preference for the internet, which provides rapid access to diverse information. Finally, although they show only superficial searching skills, students demonstrate a significant gap between the confidence they exhibit and their actual capabilities (Tricot and Boubée 2013). Taken together, it is clear that students today possess inadequate IL skills.

Impact studies indicate that school libraries can significantly promote the learning skills and achievements of students by providing a powerful and diverse resource centre while professionally collaborating with teachers and headteachers (Todd and Kuhlthau 2005; Lance et al. 2005; Ofsted 2006; Lance et al. 2007; Klinger et al. 2009; Francis and Lance 2011). Extending the involvement of the school librarian beyond the traditional role (for example by requiring librarians to provide information services to school headteachers, to support teachers' working groups or to share their teaching responsibilities) thus increases the positive influence of the library on students and improves their achievements (Lance and Lorertscher 2001). For example, school librarians can significantly contribute to students: understanding the demands of different educational tasks; focusing on research topics; defining and formulating research questions; locating relevant and quality information; and using this information in accordance with ethical guidelines (Hay 2005; Subramaniam et al. 2013; Todd and Kuhlthau 2005). The goals can be accomplished both face-to-face (eg, through individual consulting and guidance or through class training and courses) and remotely (eg, using the library website or other web-based guides to associate study topics with relevant information, choosing appropriate search engines, etc.) (Hay 2005).

Despite the potential of school librarians in developing students' IL, this potential appears to have not materialised much. For instance, an impact study conducted in the USA found that, although more than 80% of school libraries offer information skills training, the average time dedicated to this activity is relatively low, ranging between 4.3 hours/week in primary schools (also known as elementary schools) and 7.3 hours/week in high schools (Smith 2001). This may result from the poor perception of teachers, headteachers and even of the librarians themselves, of the role of the school librarian as a central figure within the school community. In fact, rather than being perceived as professional colleagues and co-teachers, school librarians are often considered to be merely storytellers and providers of information, and their role is often perceived as supportive and bureaucratic, which renders the school librarians invisible in the school environment (Dorwell and Lawson 1995; Hartzell 1997). In addition, school librarians reported that time and energy constrains hindered collaboration with teachers, and that lack of feedback from the teachers and lack of awareness of the teachers' requirements and goals hindered such collaboration (Williams and Wavell 2001).

A study of IL in United Kingdom schools found that the proportion of librarians who are engaged with IL work is higher for qualified librarians than for unqualified librarians, indicating that professionally-qualified school librarians are important for the school community and for imparting IL skills (Streatfield et al. 2011). In Israel, our earlier study (Ash-Argyle and Shoham 2012) focused on collaboration between teachers and school librarians. That study was based on a survey of 291 school librarians, teachers, and headteachers of public schools. The findings of that study indicated that leadership ability is predictive of an advanced pattern of teacher-librarian collaboration. Similarly, the perceived level of advanced cooperation was lower among librarians who did not have a teaching diploma. In the light of that previous study, the current research examines the professional self-efficacy and role perception of school librarians as indicators of their degree of involvement in different levels of reference work services (RWS) and in different stages of students' research processes (RPs). These two indicators will be briefly described to provide the theoretical framework of this study. First, however, the current condition of school libraries in Israel will be described briefly to provide the context in which the current study was conducted.

1.2 School libraries in Israel

There are today more than 2,400 primary schools and more than 1,940 high schools in Israel. With respect to libraries in these schools, high schools enjoy considerably better conditions than primary schools: whereas the regulations of the Israel Ministry of Education require that there be a librarian in every high school, it is in the discretion of the headteachers of primary schools whether the school will hold a library and what will be the scope of the librarian's activities therein (Shoham and Schenkolewski-Kroll, 2009). Consequently, whereas 90% of the Israeli high schools have an operating library, this is true in only 80% of the primary schools.

School libraries are generally poorly funded, with one librarian funded for every 25 classrooms. Most libraries suffer a shortage in manpower and resources, lack the adequate conditions for sufficient vocational training, and are physically undermaintained. In most libraries, collections are catalogued and the percentage of catalogued collections that are also computerised is higher in secondary schools than in primary schools (Central Bureau of Statistics 2007; Anzenberg and Yitzhaki 2006). In a recent study by the authors (Ash-Argyle and Shoham 2012), 89% of the librarians reported that the library in which they work has a computerised catalogue and internet access. In the current study, 60% of the librarians reported that the library has a website and 63% reported that the library has a designated email address, but only 37% reported that the library has an online catalogue.

1.3 Reference work services

Access to the various internal and external information sources that a library possesses is often a complex and non-intuitive task. Hence, libraries provide RWS to mediate effectively between the users, their need for specific information, and the available sources. RWS are information-consulting services, through which the librarian recommends, interprets, evaluates or employs information sources to answer the specific information-related needs of the library user. These services therefore include the generation, management and assessment of information and research sources, tools and services (Reference & User Services Association (RUSA) 2008). To provide these services, libraries require trained staff that can provide the service, a collection of reference sources and guides (e.g., catalogues or indexes) that enable public access to the information sources, and a high degree of interaction between the staff and users of the library (Wedgeworth1993).

The discourse within the professional literature dichotomously distinguishes between two roles of the reference librarian: providing information services and providing guidance and teaching (VanScoy 2012). The former is typically considered the true role of the reference librarian, postulating that library users requesting RWS expect an answer to their question rather than a lesson in bibliography. However, it is now being recognised that both roles are important and should be considered complementary (VanScoy 2012). For academic libraries, Bronstein (2011) identified four categories of skills that reference librarians consider most important for providing RWS:

1. *Teaching and guidance skills*: namely, guiding the library users in choosing the appropriate information sources according to their specific interests and needs. These skills were recognised by reference librarians as key factors in their job, as they relate to the entire research process and provide the user with lifetime IL tools. According to this view, an intensive interaction between the librarian and the library user will lead the user to deeper understanding of

the different stages of the RP, rather than simply answering an acute need for information (Elmborg 2002; Kuhlthau 2004).

2. *Technical skills*: which include the ability to solve simple technical issues, assist users in employing the available technologies effectively, and continuously tackle technological changes and challenges.
3. *Interpersonal communication skills*: namely being able to construct a meaningful relationship and effectively communicate with the library user, for example, by being aware of the body language and facial expressions of the user. Many librarians consider themselves mediators between the user and the information source and highlight the dynamics of the librarian-user interaction when providing RWS. In that respect, the interpersonal aspect (including the quality of the relationship, the attitude of the librarian towards the user, the degree to which the librarian is available to the user, and the rituals used when beginning and ending the traditional or virtual RWS interaction) is highly important (Radford and Connaway 2007). It is important to note, however, that the role of the librarian in establishing this interpersonal communication, as compared with his or her role in providing the relevant information to answer the user's needs, is still under debate.
4. *Self-teaching skills*: namely the ability to learn how to use new information sources, to understand the technological world of the students (e.g., the use of Facebook, Twitter etc.) to establish better communication with them, and to be constantly updated of the professional literature and relevant technical innovations.

Other personal traits that reference librarians mentioned as important for their work include curiosity, creativity, determination, intelligence, and quick learning skills (Bronstein 2011). The ability of the reference librarian to assume the role of the library user's partner (rather than assuming superiority over the user) during the RWS interaction is also important (VanScoy 2012). Under this view, reference work is the product of a collaborative and synergistic teamwork shared equally by the librarian and the user, both of whom bring their personal knowledge and expertise to this intensive interaction.

1.4 Research processes

It has been suggested that developing IL in schools should be incorporated within the regular curriculum; for instance, IL can be developed during research assignments, where they can greatly assist the students' RPs (Shilo 1996). This requires that librarians closely collaborate with teachers, participate in shaping the curriculum and use their IL and teaching skills to assist teachers in this continuous process (Dotan and Aharony 2008).

Eisenberg and Berkowitz (2003) developed the Big6 model for effective and efficient information-related problem solving. Technology skills are integrated within information processing, and thus become powerful information tools for students practicing different technological capabilities at each of the Big6 stages (Eisenberg, 2008). Similar to the Information Search Process (ISP) model offered by Kuhlthau (1991), the Big6 defines six main stages through which to integrate information searching skills with technological tools in a systematic process in order to find, use, apply and evaluate information required for a specific need or task. The model is applicable for any information-related problem or assignment and for every age group and study level, and is therefore widely used today for developing IL (Eisenberg and Berkowitz 2003; Malliari et al. 2014). While a shorter version of the Big6 model, known as the "Super3", is oriented towards younger students and contains only three stages: Planning, Doing and Reviewing, the full version of the

Big6 model comprises six consecutive stages that describe the optimal acquisition, use and evaluation of information during a RP. These stages are as follows:

1. *Task Definition*: defining the assignment and identifying the information required to accomplish it.
2. *Information Seeking Strategies*: determining the possible information sources that can be used, and selecting those that are most suitable to accomplishing the specific task at hand.
3. *Location and Access*: locating the information sources and finding the relevant information within these sources.
4. *Use of Information*: engaging in different actions (e.g., reading, hearing, viewing, touching) to extract the information, and deciding on the optimal means of using (and citing) the information source.
5. *Synthesis*: optimally organizing the information and presenting it while crediting the source.
6. *Evaluation*: judging both the effectiveness of the product (does it answer the requirements of the specific assignment? Is it suitable for submission?) and the efficiency of the process (how well did I perform? How can I improve the process in the future?).

(The Big6 2014)

Each of the Big6 six stages defines two separate components, which together form the 12 little stages of the entire process. In each stage, key questions are raised and the answers to which provide the basis for the successful continuation of the process. Nevertheless, the model should not be viewed as a linear model but rather as a spiral one, as the order of the stages may change and some stages may be repeated or omitted.

The Big6 model is both a working and an evaluation tool; it was constructed to assist teachers and students in better defining and improving information-related tasks. Its generalised nature makes it easy to assimilate in different contexts and its focus on the process (rather than on the product alone) allows both teachers and students to examine critically each stage of the teaching / learning process. It is advantageous for imparting research skills because it is relatively simple and matches established educational paradigms, thereby forming a communal language between students and teachers with respect to educational research assignments and their solutions. When applied to planning and conducting various research projects assignments, the model may modify the students' behaviour to improve their achievements and abilities (Eisenberg and Berkowitz 2003). In schools, an efficient IL learning process requires that teachers emphasise assignments and questions that promote critical and creative thinking of the students. It is here that the school librarian can and should assist teachers, for instance in comprising research assignments and questions while implementing the Big6 model (or other relevant models) within the curriculum (Murray 2008).

In Israel, Dotan and Aharony (2008) have studied the involvement of school librarians in supplying IL services to students. In a sample of 138 secondary-school librarians, the authors reported high involvement of the librarians in promoting reading and in guiding students in information searching and in evaluating information resources, indicating that the school librarians focus on information-searching activities. The authors also examined the relationship between the formal qualifications of the librarian as a teacher and his or her inclination to impart IL skills. Although half of the examined librarians were also certified teachers, these librarians were, in fact, less involved in developing the IL of students than librarians with no certified teaching qualification. Dotan and Aharony (2008) suggest that this phenomenon may result

from the perceived inferiority of those librarians who are also certified teachers, and that this inferiority emanates from class differences and wage differentials between teachers and librarians in Israel. In addition, it is also plausible that those librarians—ie former teachers who retired from teaching and became librarians—are less inclined to engage in teaching activities in their new job. The authors emphasise the importance of teacher-librarian collaboration in supplying IL services and highlight a number of relevant factors, including: budget issues; lack of technology and manpower; lack of time for cooperative planning with teachers; lack of interest from the teachers and headteachers; and lack of adequate skills.

In the UK, Streatfield et al. (2011) found that school librarians are mostly involved with promoting reading and developing the IL skills of the students. In contrast to the study of Dotan and Aharony (2008) in Israel, Streatfield et al. (2011) found that certified librarians who are also qualified as teachers are more proactive, more engaged in collaboration with teachers, and more involved in providing IL-related services. Two similarities between the UK and Israeli studies are the tendency of school librarians to be involved mainly in information-searching activities, and the hindering factors (including lack of time dedicated to involvement in IL, lack of interest from the teachers, and differences in the employment status of librarians versus teachers).

1.5 Professional self-efficacy

Self-efficacy is the belief of an individual that he or she can successfully perform a set of behaviours required to achieve a certain goal (Bandura 1977). Succeeding in performing tasks, observing role models or receiving positive feedback are several means of increasing self-efficacy and, in turn, improve the individual's performance. One subset of self-efficacy is professional self-efficacy, which relates specifically to the individual's profession. It relates to the perceived ability of the individual to simultaneously employ all the skills relevant to this profession or role, and thereby shape his or her professional life (Friedman 1999). For teachers, a high degree of professional self-efficacy was found to be associated with open-mindedness towards novelties and with attempting new educational pathways (Friedman 1999). Similarly, in school librarians, a higher degree of professional self-efficacy with respect to leadership skills has been associated with a higher probability to collaborate with teachers and be involved in planning, evaluating and conducting educational activities (Ash-Argyle and Shoham 2012). Thus, as professional self-efficacy towards certain professional domains can improve achievements, the current study evaluated the professional self-efficacy of school librarians and how it relates to their involvement in providing RWS and in assisting with RPs. Four domains of professional self-efficacy were evaluated: teaching skills and abilities; technical and technological skills; interpersonal communication skills; and self-teaching skills / level of professional updating.

1.6 Role perception

One important issue in the field of school libraries is the role perception of the librarian, both in the eyes of the librarians themselves and in the eyes of the teachers and headteachers of the school. This issue was discussed in several studies, which all indicated a problematic role perception that hinders collaboration between teachers and librarians. The school librarian is often perceived as a storyteller and a supplier of information resources, rather than as a peer and a co-teacher. Both headteachers and teachers tend to perceive the role of the librarian as purely clerical, resulting in an attitude of indifference towards librarians and making them invisible in

the school environment (Dorwell and Lawson 1995; Hartzell 1997). Nevertheless, in a study by Williams and Wavell (2001), all 10 librarians who were interviewed considered collaboration with teachers to be part of their role in the school, although such collaboration was reported to be less than optimal. The current study thus evaluated the role perception of school librarians, differentiating between their perception as being information experts, education and teaching consultants, managers of the library programme, promoters of reading skills, co-teachers, and leaders in the school community.

2. Research hypotheses

The current research tested four hypotheses:

a. School librarians will be more involved in providing basic than advanced RWS.
b. School librarians will be more involved in RP stages 2 (*Information Seeking Strategies*) and 3 (*Location and Access*) of the Big6 model than in RP stages 1 (*Task Definition*), 4 (*Use of Information*) and 5 (*Synthesis*). In addition, school librarians will be least involved in RP stage 6 (*Evaluation*).
c. A positive correlation will be observed between the professional self-efficacy of the librarians and the degree to which they are involved in providing RWS and assisting with students' RPs.
d. A positive correlation will be observed between a wider perception of the school librarians of their role within the school community and their degree of involvement in providing RWS and assisting with students' RPs.

3. Methodology

3.1 Variables

Variables used in this study include:

a. The degree of involvement of school librarians in providing basic and advanced RWS(see Table 1).
b. The degree of involvement of school librarians in students' RPs, according to the six stages described in the Big6 model.
c. The professional self-efficacy of school librarians in four relevant domains: (1) teaching and training abilities; (2) technical and technological skills; (3) interpersonal communication skills; and (4) self-teaching skills and level of professional updating.
d. The perception of school librarians of their role within the school community.

3.2 Study tool

A self-administered questionnaire was distributed among school librarians. The questionnaire included five sections:

a. Assessment of background variables, including personal variables (sex, age, seniority, role, education, training type, extent of position), school-related variables (school type and education level), and library-related variables (staff size, internet access, library services, target audience). Statements regarding the target audience, type of RWS trainings and methods of service delivery

were rated on a 5-level Likert scale, with 1 indicating “not at all” and 5 indicating “to a very high extent”.

b. Evaluation of the degree of involvement in providing different RWS. This section included 13 statements, representing different levels of RWS (from basic to advanced), as detailed in Table 1. The statements were constructed by the authors of this paper, with advanced RWS including higher information and technological skills and closer collaboration with teachers. To describe the degree to which participants provide each specified RWS, they were requested to use a 5-level Likert scale, with 1 indicating “not at all” and 5 indicating “to a very high extent”. The alpha-Cronbach internal consistency value of statements regarding basic and advanced RWS was 0.79 and 0.76, respectively.
c. Evaluation of the degree of involvement in different RP stages. This section included six statements representing the six stages’ of the RP according to the Big6 model, as described above. To describe the degree to which participants are involved in each specified RP stage, they were requested to use a 5-level Likert scale, with 1 indicating “not at all” and 5 indicating “to a very high extent”.
d. Evaluation of professional self-efficacy. This section included 12 statements representing the four professional efficacy domains previously indicated as the most important for reference librarians (Bronstein 2011): (1) teaching and training skills; (2) technical and technological skills; (3) interpersonal communication skills; and (4) self-teaching/ professional updating abilities. To describe the degree to which participants feel proficient with the specified skill, they were requested to use a 5-level Likert scale with 1 indicating “not at all” and 5 indicating “to a very high extent”.
e. Evaluation of role perception. This section included six statements representing different relevant librarianship roles as described by school librarians' associations (American Association of School Librarians and Association for Educational Communications and Technology 1998b; American Association of School Librarians 2009; School Library Association of South Australia 2003). The participants were asked to what degree they consider their role in the school community to be: (1) information expert; (2) education and teaching consultant; (3) manager of the library program; (4) promoter of reading skills; (5) co-teacher; and (6) leader in the school community. To note the degree to which participants feel that the specified statement reflects their role in the school community, they were requested to use a 5-level Likert scale, with 1 indicating “not at all” and 5 indicating “to a very high extent”. No further explanations were provided as to the meaning of each role, such that the interpretation of those roles was subjective.

Table 1: Statements representing the different RWS assessed in this study.

Item #	Basic RWS	Item #	Advanced RWS
1	Use of the library catalogue	4	Assisting to obtain bibliographical information from keys and/or free-access Internet sources
2	Locating items in the physical library	5	Assisting to obtain bibliographical information from paid keys or information sources
3	Assisting to obtain bibliographical information from catalogues of other libraries	6	Assisting to obtain information from the Internet
7	Assisting to obtain bibliographical information of a specific book or article	10	Providing training on the use of a certain information source
8	Assisting with standard referencing procedures of bibliographical items	11	Consulting to teachers on the definition of educational assignments that involve library / IL skills
9	Consulting regarding the library's possession of a certain book or journal	13	Collaborating with teachers to construct educational assignments requiring library / IL skills
12	Assisting teachers to locate information sources relevant to a specific educational topic		

3.3 Study population

The study included 70 female librarians and one male librarian, with the mean age of 47 years old (S.D. = 0.9 years). At the time of the survey, 54 librarians (76%) worked in secondary schools and 17 librarians (24%) worked in primary schools. Most librarians had medium to high working experience, with 20 participants (28%) working as librarians for more than 10 years and 19 participants (27%) working as librarians for less than 5 years. Approximately half of the librarians (35 participants) had a diploma in librarianship / information science, 15 librarians (21%) had a diploma in education, 15 librarians (21%) had a double diploma in education and librarianship / information science, and only 6 librarians (8.5%) had no official training. Most librarians (83%) had an academic degree.

3.4 Procedure

During summer 2012, an online questionnaire was emailed to school librarians and to district administrators who distributed the questionnaires to school librarians in their district. Some librarians and district administrators were approached twice to increase participation rates. Altogether, questionnaires were obtained from 73 librarians, of which 71 answered all questions and were included in this study.

4. Results

4.1 Reference work services

Generally, librarians considered the target audience for RWS to be primarily students, followed by teachers and, to a lesser extent, school headteachers (see Table 2).

Table 2: Target audience for RWS

Target audience	Average	Standard Deviation
Students	4.06	1.10
Teachers	3.42	1.12
Headteachers	2.36	1.21

Most librarians indicated providing RWS in a face-to face manner, whereas remote RWS through email, telephone or online forms was less prevalent (see Table 3).

Table 3: Means of providing RWS

Means of providing RWS	Average	Standard Deviation
Face-to-face	4.49	0.72
Remote, through email	2.02	1.14
Remote, through telephone	1.85	0.81
Remote, through online forms	1.07	0.32

4.2 Hypotheses testing

The first hypothesis of this study postulated that school librarians will be more involved in providing basic compared with advanced RWS (see Table 1). A t-test for dependent samples revealed that librarians are significantly more involved in providing basic than advanced RWS ($t=10.544$, $df=69$, $p<0.001$; Table 4); thus, the first hypothesis was confirmed (see Table 4).

Table 4: Type of RWS provided

Type of RWS provided	Average	Standard Deviation
Basic RWS	3.45	0.85
Advanced RWS	2.69	0.84

The second hypothesis of this study postulated that school librarians will be more involved in RP stages 2 (Information Seeking Strategies) and 3 (Location and Access); to a lesser extent in RP stages 1 (Task Definition), 4 (Use of Information) and 5 (Synthesis); and almost not at all in RP stage 6 (Evaluation). Indeed, librarians were significantly more involved in stage 2 ($t=3.10$, $df=66$, $p<0.01$) and in stage 3 ($t=2.71$, $df=66$, $p<0.01$) than in all other RP stages (Table 5). The involvement of librarians in RP stage 6 was the lowest of all stages. Thus, the second hypothesis was confirmed (see table 5).

Table 5: Degree of involvement in different RP stages according to the Big6 model

RP stage	Number of respondents	Average degree of involvement
Stage 1	66	2.47
Stage 2	68	3.60
Stage 3	68	3.12
Stage 4	67	2.36
Stage 5	67	2.04
Stage 6	66	1.79

The third hypothesis of this study postulated that librarians possessing a higher degree of professional self-efficacy would be more involved in providing RWS and in assisting with students' RPs. This hypothesis was partly confirmed (see Tables 6 and 7). A higher degree of self-efficacy was significantly correlated with a higher degree of involvement in obtaining information from catalogues of other libraries (basic RWS 3) or from the internet (advanced RWS 4 and 6), and with a lower degree of involvement in obtaining information from paid sources (advanced RWS 5). A detailed analysis revealed that librarians possessing a higher degree of professional self-efficacy in the "teaching and training skills" domain were significantly more involved in locating items in the physical library (basic RWS 2) but were significantly less involved in obtaining information from paid sources (advanced RWS 5).

Librarians possessing a higher degree of professional self-efficacy in the "technical and technological skills" domain were significantly more involved in obtaining bibliographical information from keys and/or from free-access internet information sources (advanced RWS 4). Involvement in advanced RWS 4 was also significantly higher in librarians possessing a higher professional self-efficacy in the "self-teaching ability / professional updating" domain, and a higher professional self-efficacy in this domain was also significantly correlated with a higher degree of providing standard referencing procedures of bibliographical items (basic RWS 8). Professional self-efficacy in the "interpersonal communication skills" domain was not significantly correlated with any of the examined RWS. Finally, the degree of involvement in students' RPs was significantly correlated only with the professional self-efficacy domain "self-teaching abilities/ professional updating", wherein librarians possessing a higher degree of self-efficacy were also significantly more involved with RP stages 1-3.

Table 6: Spearman's correlation coefficients between professional self-efficacy and the degree of involvement in providing basic (b) and advanced (a) RWS

RW service	General self-efficacy	Self-efficacy domain			
		Teaching / training skills	Technical/ technological skills	Interpersonal communication skills	Self-teaching skills / professional updating
Service 1 (b)	0.07	-0.01	-0.16	-0.19	0.07
Service 2 (b)	0.11	0.25 *	-0.07	0.20	0.11
Service 3 (b)	0.20 *	0.10	0.2	0.07	0.18
Service 4 (a)	0.21 *	0.03	0.25*	0.06	0.31 **
Service 5 (a)	-0.27 *	-0.32 **	-0.10	-0.19	-0.17
Service 6 (a)	0.21 *	0.10	0.02	0.13	0.14
Service 7 (b)	0.04	0.01	0.05	0.00	0.14
Service 8 (b)	0.17	0.09	0.16	0.11	0.23 *
Service 9 (b)	0.08	-0.01	0.05	0.14	0.12
Service 10 (a)	0.16	0.07	0.16	0.00	0.19
Service 11 (a)	0.11	0.11	0.04	0.02	0.14
Service 12 (b)	0.17	0.09	0.10	0.17	0.16
Service 13 (a)	-0.04	0.03	-0.16	0.00	0.02
Basic Services	0.15	0.08	0.08	0.07	0.24 *
Advanced Services	0.13	0.01	0.14	0.00	0.23 *

*p<0.05; **p<0.01

Table 7: Spearman's correlation coefficients between professional self-efficacy and the degree of involvement in different RP stages according to the Big6 model

RP stage	General self-efficacy	Self-efficacy domain			
		Teaching/ training skills	Technical/ technological skills	Interpersonal communication skills	Self-teaching skills / professional updating
Stage 1	0.17	0.20	0.10	-0.3	0.24 *
Stage 2	0.14	0.04	0.14	-0.6	0.29 **
Stage 3	0.12	0.07	0.07	-0.04	0.25 *
Stage 4	-0.05	-0.07	0.01	-0.09	0.07
Stage 5	0.06	0.03	0.06	0.02	0.13
Stage 6	0.00	-0.03	-0.02	-0.01	0.17

*p<0.05; **p<0.01

The fourth hypothesis of this study postulated that a positive correlation would be found between a wider perception of the librarian's role within the school community and the degree of involvement in providing RWS and assisting with students' RPs. This hypothesis was confirmed (see Tables 8 and 9). Specifically, librarians possessing a higher role perception as co-teachers were also significantly more involved with providing RWS (namely, with all the basic RWS and with 3 of the 6 advanced RWS), as well as with assisting students during the first four 'big stages' of their RP according to the Big6 model. Similarly, librarians possessing a higher role perception as leaders in the school community were also significantly more involved with providing RWS (namely, with providing RWS 11-13, which involve collaborating with and assisting teachers), as well as with assisting students during the first four 'big stages' of their RP according to the Big6 model. Notably, librarians with a higher degree of role perception as education and teaching consultants were significantly more involved with providing advanced RWS that include assisting to teachers (RWS 11-13), but not in assisting with students' RPs. Librarians with a higher degree of role perception as information specialists were significantly more involved with providing advanced RWS, namely, with consulting to teachers regarding educational tasks that require library/ IL (RWS 11) and in collaborating with teachers to construct educational tasks (RWS 13). A higher degree of role perception as a promoter of reading was significantly correlated only with a higher degree of involvement in constructing educational tasks in collaboration with teachers (RWS 13). This probably relates to librarians constructing specific reading-promoting programs with the teachers, which are common in schools. A significant negative correlation was found between RWS 5 (retrieving paid information) and with the promotion of reading and management of the library program, which may have resulted from the low library budget allocated for purchasing items from paid databases.

Table 8: Spearman's correlation coefficients between different role perceptions and the degree of involvement in RWS

RW service	Role perception					
	Co-teacher	Information expert	Education/ teaching consultant	Manager of the library program	Promoter of reading	Leader in the school community
Service 1 (b)	0.31 **	0.18	-0.09	-0.12	0.03	0.20
Service 2 (b)	0.31 **	0.22	0.26 *	-0.20	0.07	0.08
Service 3 (b)	0.45 **	0.13	0.21	-0.20	-0.09	0.00
Service 4 (a)	0.53 **	0.08	0.21	-0.01	-0.17	0.02
Service 5 (a)	0.11	-0.10	-0.19	-0.44 **	-0.30 *	-0.12
Service 6 (a)	0.45 **	0.12	0.37 **	0.01	0.06	0.14
Service 7 (b)	0.41 **	0.20	0.18	0.01	0.05	0.20
Service 8 (b)	0.43 **	0.17	0.25 *	0.07	0.08	0.11
Service 9 (b)	0.32 **	0.09	0.23	0.00	-0.09	0.16
Service 10 (a)	0.34 **	0.17	0.24	0.08	-0.09	0.11
Service 11 (a)	0.15	0.35 **	0.26 *	0.26 *	0.18	0.51 **
Service 12 (b)	0.35 **	0.18	0.31 **	0.13	0.13	0.42 **
Service 13 (a)	0.05	0.27 *	0.24 *	0.10	0.27 *	0.45 **
Basic Services	0.55 **	0.23	0.27 *	-0.04	0.03	0.24 *
Advanced Services	0.45 **	0.26 *	0.30 *	0.03	0.01	0.31 **

*p<0.05; **p<0.01

Table 9: Spearman's correlation coefficients between different role perceptions and the degree of involvement in different RP stages according to the Big6 model

RP stage	Role perception					
	Co-teacher	Information expert	Education/ teaching consultant	Manager of the library program	Promoter of reading	Leader in the school community
Stage 1	0.29 *	0.32 *	0.22	0.04	0.25 *	0.28 *
Stage 2	0.48 **	0.13	0.21	-0.8	0.01	0.28 *
Stage 3	0.42 **	0.23	0.15	-0.04	0.14	0.27 *
Stage 4	0.24 *	0.20	0.00	0.07	0.03	0.31 **
Stage 5	0.03	0.25 *	0.15	0.09	0.19	0.18
Stage 6	0.07	0.27 *	0.19	0.10	0.17	0.08

*p<0.05; **p<0.01

5. Discussion

This study represents the first investigation of the association between (a) the professional self-efficacy of school librarians and their perception of their own role within the school community, and (b) their degree of involvement in providing RWS and in assisting with students' RPs, two dimensions of the librarian's work which reflect IL-skills training (American Association of School Librarians 2009; Branch and Oberg 2001). The presented data clearly indicate that, at least in Israel, school librarians are more involved in providing basic than advanced RWS. As advanced RWS refer, in part, to services involving a high level of collaboration between teachers and librarians, this result is in accordance with previous studies demonstrating a loose collaboration between librarians and teachers (Ash-Argyle and Shoham 2012) and a problematic role perception of the librarians (Hartzell 1997). In addition, advanced RWS include more complex information-seeking services (namely, via the internet and open- and restricted-access digital databases), which require advanced informational and technological skills, as well as access to the information sources and databases. Most school librarians in Israel currently lack the relevant training, and therefore the skills, for such complex information seeking (Dotan and Aharony 2008). Further, teachers and headteachers are often not interested in (and probably fail to see the potential of) providing advanced library services, and budget issues hinder the use of valuable paid databases (Dotan and Aharony 2008).

The data also show that most librarians are moderately or highly involved in the second big stage of the Big6 model, namely, in the information-seeking stage. Most of the reference work takes place during this stage, and it is the most familiar aspect to librarians (eg, Streatfield et al. 2011). Involvement in the other five big stages of the students' RP is lower, and librarians did not report either a moderately-high or high involvement in these stages. This phenomenon may indicate that such stages are considered primarily the mandate of teachers, but may also be explained by lack of staff time and lack of interest on behalf of teachers (Dotan and Aharony 2008; Streatfield et al. 2011). Collaborations between teachers and librarians, despite their clear advantage in better employing information sources, utilising teaching hours and improving the students' achievements and IL (Lance and Loertscher 2001), appear to still be lacking. This can be explained by factors related to how teachers and headteachers tend to perceive the librarian and to their lack of awareness of the librarian's role and potential contribution to the learning process (Harzell 1997). A plausible solution for this problem may come in the form of librarians more actively offering relevant services and information sources, encouraging teachers, headteachers and students to further acknowledge and make use of the librarian's capabilities. This, in turn, may also greatly advance the development of students' IL.

A highly-significant positive correlation was found between the librarians' professional self-efficacy in the "self-teaching/ professional updating" domain and the degree to which the librarians are involved in providing RWS and in assisting with the first three RP stages of the students (notably, for the latter, none of the other professional self-efficacy domains examined in this study significantly contributed). This finding is in line with the recommendation of Todd and Kuhlthau (2005) that school librarians should be provided with the opportunity for professional development to reach performance standards. It is also in line with results obtained in academic libraries (Bronstein 2011), wherein reference librarians testified that self-teaching abilities and continuous professional development are important factors for providing adequate RWS. Such personal traits should therefore be considered not only in academic but also in school libraries (for instance upon choosing library staff), and possibly also with respect to admission requirements to the study of librarianship and information

science. Notably, the level of self-teaching ability and professional development depends not only on the personal initiative of the librarian but also on the system as a whole, for instance on allocating the time and resources for professional advanced studies and purchasing updated professional literature. Thus, the authorities supervising school libraries, as well as the school headteachers, may offer opportunities for the professional development of the librarians in this domain to maintain their professional development. Several alternatives for accomplishing this goal come to mind, for instance: including professional development as a component of the standard school budget framework; encouraging or supervising the professional development of librarians similar to that of teachers; and including high standards for professional self-development in the terms of employment and working in the school library. Such standards are today widely employed in academic libraries, wherein accessibility to professional literature, information sources and professional conferences is high and diverse.

Self-efficacy in the domain of interpersonal communication was not found in the current study to be significantly correlated with any of the examined RWS, suggesting that this skill is important but not sufficient for providing reference work at schools. This finding is surprising in the light of previous research (Bronstein 2011), which found this domain highly important for academic librarians. It is possible, for example, that a digital divide leads to a communication gap between the relatively old school librarians (in the current study: 47 years old on average) and the much younger students of the primary and high school. Further, students often hold negative perceptions regarding the school library (e.g., strict rules, unpleasant staff), which may drive them to self-search for information using the readily-accessible information on the internet (Radford and Connaway 2007; Hughes-Hassell and Bishop 2007). Future studies should therefore explore the possibility of better acquainting the school librarians with the content worlds of younger students (eg Facebook and Twitter, among others) and with means to improve interpersonal communication skills with the students.

As expected from the nature of the reference work, technical and technological skills were found to be positively correlated with obtaining bibliographical information from keys and/or open-access online databases. The negative correlation found between the general professional self-efficacy of librarians and the degree to which they provide reference services that involve obtaining bibliographical information from paid keys and/or databases apparently results from the fact that most Israeli school libraries are not connected to paid databases, hence this service cannot be offered. This again highlights the significant differences between academic and school libraries, and suggests that school libraries may greatly benefit from increasing accessibility to more diverse information sources and databases.

The degree of involvement of school librarians in assisting students with the first four stages of the RP according to the Big6 model was found to be significantly and positively correlated with the perception of the librarians' own role as co-teachers and as leaders in the school community. This indicates that a wider role perception, which extends keeper of books or information providing, may help position the librarians as significant contributors to the students' RPs. This finding is in line with the authors' previous study (Ash-Argyle and Shoham, 2012), which demonstrated that librarians who are perceived (by teachers as well as by themselves) as capable of leading have a higher probability of maintaining advanced collaborations with teachers. Thus, librarians holding wider role perceptions may appear, in the eyes of the students, staff and themselves, as being able to assist not only in the search for, and evaluation of, the relevant information but also in earlier (eg, appropriately formulating the research question) and later stages (eg, integrating and organising

the information) of the students' RP. The involvement of school librarians in the initial stage of the RP (Task Definition, Stage 1) and in the two final stages, namely, in preparing and presenting the product (Synthesis, Stage 5) and in evaluating the product and process (Evaluation, Stage 6), were found to be significantly and positively correlated with the self-perception of the librarian's role as an information expert. It therefore appears that librarians who perceive themselves as information experts may also be perceived as such by the students and staff, encouraging them to consult with the librarian not only regarding the more traditional aspects of the RP (Stages 2 and 3) but also regarding other aspects (Stages 1, 5 and 6). In this respect, the training of school librarians should emphasise the field of information science, highlighting the notion that being an information expert is an important part of the librarian's job. Although not directly examined in the current study, possessing academic experience and previous practice with the different aspects of research may also be contributing factors that should be examined in future studies.

Finally, a significantly positive correlation was found between the self-perception of the librarian's role as a promoter of reading and the degree of involvement in the initial stage of the RP. This may result from the involvement of school librarians in assisting students with choosing reading books and subjects, which is a common role of school librarians. One should consider, however, that this role perception may hinder other perceptions, such as being a co-teacher, being a leader in the school community or being an information expert, which have a higher potential in contributing to the IL skills of the 21st century students.

6. Limitations and future directions

This study is not devoid of limitations, which future studies should consider. First, we tested role perception and professional self-efficacy as major contributor to the degree of involvement of school librarians in providing RWS and assisting with students' RPs, but other contributing factors (eg, librarians' time management; the existence of a library development plan; or librarians' qualifications) (Streatfield 2011; Dotan and Aharony 2008) to librarians' activity should be tested. Second, future studies may want to extend the results of the current investigation by adding qualitative data to the quantitative analyses. Open-ended questions can be added to questionnaires to provide a better picture of the role perception of the librarians and to clarify the perceptions underlying some of the observed phenomena (eg, the lack of involvement of librarians in students' RPs, which may indicate transmitted curriculum and didactic teaching). Third, future studies may employ different means of assessing the degree to which librarians assist students with RPs. The Big6 model has been criticised in the past, as it may over-simplify iterative processes and overlooks a key element in the digital age: the transformation of information to construct personal knowledge. In addition, step 4 of the model consists of different activities, which were not individually assessed here. Either using questionnaires with a higher resolution, and/or using different assessment methods, may thus prove beneficial. Fourth, no specific explanations were provided to the librarians with regard to the six role perceptions, possibly allowing different interpretations. Finally, the findings and conclusions of this study apply within the Israeli context; further research worldwide is required to determine whether our observations apply to other contexts as well.

7. Conclusions

This study shows that school librarians in Israel generally provide primarily basic (rather than advanced) RWS and that their degree of involvement in students' RPs is relatively low and focuses on searching and evaluating information. A higher involvement in providing advanced RWS and in assisting students with other aspects of the RP is correlated with the self-perception of librarians as being co-teachers, being leaders in the school community and being information experts. Emphasising and encouraging these perceptions may therefore position the librarians as significant contributors to students' RPs, increasing the librarians' degree of involvement in such endeavours and developing the students' IL. In addition, the library's computation level and the accessibility to online information sources and databases, as well as offering routes for professional development, may increase the librarians' involvement in providing RWS and thus assist them in developing IL. Indeed, school libraries in Israel are significantly less developed in these domains compared with academic and even public libraries, requiring decision makers in the school, regional and state levels to lead a significant change for the benefit of the students.

Regarding the self-perception of librarians of their professional efficacy, the most robust finding of this study is the significant positive correlation between self-efficacy in the self-teaching and professional development domain and the degree of involvement in providing RWS and in assisting with students' RPs. The competence of the librarians, their status and their practical ability to support teaching and learning processes largely depends on their ability to develop by reading professional literature; being aware of and understanding technological innovation;, and participating in professional conferences and advanced studies. Such continuous vocational development is a prerequisite for the success of librarians in providing the different aspects of reference work. Thus, similar to teachers, school librarians should be expected and encouraged to develop professionally, as well as be adequately awarded for such development, as part of their role within the school community. Despite the conclusions regarding the importance of professional development and an appropriate role perception, librarians will hardly be able to construct a significant change in the field without support from headteachers, collaboration with teachers, and the time to dedicate to IL-related work.

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