oeit Office of
Educational
Technology

Instructional Technology Resource Teacher and Technology Support Positions

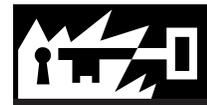# A Handbook for School Divisions

Virginia Department of Education

Instructional Technology Resource Teacher (ITRT)

As technology becomes integrated into instruction and a pervasive tool for learning and communication, schools face many challenges in providing adequate levels of technology support. Two of the often-mentioned barriers preventing technology use in classrooms are planning for and incorporating technology into lessons, and insufficient, inappropriate, or inconvenient training. Support and professional development can be considered the most critical components for effective integration of technology. Effective support focusing on curriculum and technology integration at the school site can be one-on-one, in small groups, by grade-level, by department, or by skill level by the ITRT in a coaching or mentoring role. Teachers from the Ameritech Classroom of the Future indicated that they owed their success in this technology-rich environment to the technology specialists who supported their integration and facilitation needs. Research indicates that learning is enhanced when technology tools are used appropriately and effectively. The ITRT can be a valuable asset in creating, implementing, and directing a global vision for integrating technology into classroom instruction.

Instructional technology resource teachers (ITRTs) provide on-site and on-demand assistance for fellow teachers to create different forms of learning and teaching with the help of technologies. They seek to improve student learning by showing teachers the thoughtful applications and best practices of these new tools. Indications show that ITRTs, carefully chosen and wisely used, are more effective in helping teachers incorporate technology into teaching and learning than any other form of professional development. The intent of providing funding for instructional technology resource teachers in the Standards of Quality (SOQ) is to assist teachers with the integration of technology in the classroom, to train teachers to use technology in an effective manner, and to assist with curriculum development as it relates to educational technology. An instructional technology resource teacher:


Teaching credibility, a clear vision and excellent communication skills, the ITRT can assist teachers in unlocking the power of technology in classroom instruction.

- Provides direct support to the classroom teacher coaching or modeling for the utilization of technology tools and resources to support instruction in the classroom
- Consults and collaborates directly with teachers and only works with students for the purpose of modeling or demonstrating a lesson
- Advises and assists teachers to determine what, when, and where to integrate appropriate technology tools in the curriculum to enhance teaching and learning
- Has a strong foundation in pedagogy and teaching methodologies
- Models technology usage for staff and shares the vision of integrating technological components
- Is an experienced user of technology for productivity
- Collaborates with school personnel, and administrators
- Coordinates the selection and acquisition of software

- Develops a rich library of curriculum-driven support materials and technology-enhanced resources for grade levels and subject areas for teachers
- Keeps current with updates in educational technology
- Researches and develops methods of state academic standards and curriculum with effective technology-based teaching and learning strategies to improve student achievement
- Helps schools develop and implement short-term and long-term learning goals into school improvement plans to support student achievement objectives and proficiencies
- Facilitates a school-wide technology effort
- Designs and implements high-quality professional development.
- Conducts assessment of teacher and student technology literacy and use
- Evaluates activities to determine effectiveness
- Is a liaison between the school and the school division technology office

Roles and Responsibilities

Effective support that focuses on curriculum and technology integration is the primary goal of technology support staffing. The challenge is to provide adequate training and support to bring teachers at every point of the continuum from technophobia to technomania to an adequate level of technical expertise so learning goals can be met. Considerable consideration should be given to the roles and responsibilities of the ITRT. This individual is a valuable asset in creating, implementing, and directing a global vision for integrating technology into schools. Clear descriptions of responsibilities and precise expectations of the ITRT should be developed and agreed upon to assure the successful supervision and implementation of the support program.
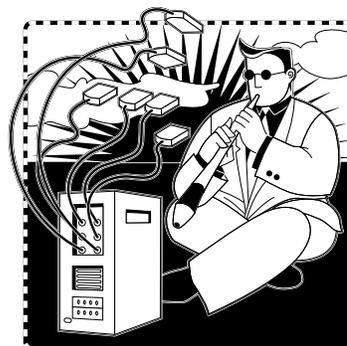
The ITRT is specified as a teacher, and therefore must be a licensed teacher. The position is full-time equivalent. Instructional technology resource teachers are available throughout the school day for planning and implementation of integration activities. This avoids the challenge of finding time to provide support while meeting teaching obligations. Instructional technology resource teachers are intended to serve as resources to classroom teachers, but are not intended to serve as classroom teachers. Their primary purpose is to train teachers to use technology in an effective manner. In this role they are also agents of change and actively engaged in curriculum development and lesson planning. They use their credibility as a classroom teacher and their knowledge of teaching strategies to help design lessons and plan projects with the teachers. It is not the responsibility of the instructional technology resource teacher to evaluate a teacher's performance. The ITRT does, however, work with the teacher to assess the effectiveness of a technology-based lesson.

Qualifications include,
but are not limited to:

- Being a licensed teacher
- Having successful teaching and classroom management experience
- Knowledge of curriculum, instructional strategies, and the Standards of Learning Program
- Knowledge and proficient user of computers and related technology
- Skill in integrating technology with curriculum
- Skill in working with others in a leadership position
- Ability to maintain a good working relationship with others
- Possessing effective interpersonal and organizational skills
- Ability to articulate and adapt communication and presentation style for various audiences
- Demonstrates oral and written communication skills

Duties and responsibilities of an ITRT include
but are not limited to:

- Working collaboratively with individual or groups of teachers to integrate technology into instruction
- Assisting with curriculum and content development
- Disseminating information regarding technology resources, emerging technologies, best practices using technology, and professional development opportunities
- Facilitating or conducting technology-related professional development for school staff
- Assessing levels of teacher and student technology use and skills
- Working with appropriate division or school-based curriculum and technology staff to help school staff in integrating technology into the curriculum
- Modeling effective instructional strategies using technology
- Serving as a member of the school technology committee
- Supporting implantation of the division and state technology plan
- Researching use of newer technologies in instruction
- Using data to design technology-based instructional strategies
- Recommending hardware, software, and related resources
- Identifying trends in software, curriculum, teaching strategies, and other educational areas
- Creating learning resources for teachers, staff and students
- Serving as a strong advocate for technology integration
- Participating in software selection and use

"If the teachers see the TIS (Technology Integration Specialist) first as a teacher and second as a technologist, their partnerships are likely to be that much more productive." (http://curry.edschool.virginia.edu/class/edlf/589/reviews/Scot_Hall.doc)

Attributes of An
Instructional Technology Resource Teacher

Interpersonal skills include the habits, attitudes, manners, appearance, and behaviors we use while working with people that affect how well we get along. Good interpersonal skills are a prerequisite for success as an instructional technology resource teacher. The ITRT provides assistance by consulting with other teachers, discussing and sharing teaching practices, and supporting efforts to enrich student learning through technology. Interpersonal skills, such as communication, problem solving, and teamwork abilities enable the ITRT to work with others harmoniously and efficiently. Collaboration should take place in a non-threatening and non-judgmental environment. Technical support needs to be on-site, individualized, and teacher-oriented. The ITRT needs to relate well with teachers. If this doesn't happen, the chance of successful integration is in jeopardy.

ITRTs Who Have Good Interpersonal Skills:

- Are good listeners
- Work harmoniously and efficiently with others individually and in team settings
- Manage conflict effectively by devising win-win solutions, constructively influencing the behavior of others, use effective communication and persuasive strategies
- Are able to align their goals to the goals of others during collaborative activities
- Are forthright
- Respectful of others
- Friendly
- Maintain enthusiasm
- Pleasing personality
- Helpful and patient when dealing with users
- Remain calm and polite under stress
- Are able to manage their behavior during social interactions
- Are sensitive to the needs of others and to the forces that shape the way others feel and behave
- Enhance the strengths and abilities of others
- Are approachable and interact well with others
- Provide guidance to subordinates when needed; resist controlling others by allowing autonomy when appropriate

"The need for possessing excellent people skills, flexibility and a global perspective far outweigh the need for technological expertise." (From, Fulfilling the Need for a Technology Integration Specialist)

Time Management

As indicated in the legislation for the ITRT position, this person should be a licensed teacher who works directly with classroom teachers and the integration of technology into instruction. Time management becomes essential when such variables as the job description, number of schools served, size of staff, available technology support and resources, and the technology integration goals are to be considered.

The following table outlines the amount of time ITRTs may spend on various aspects of their job. While the percentages may vary from school to school, the ITRT is, above all, the individual available throughout the school day responsible for assisting teachers with the integration of technology in the classroom.

Task	Percent of Time
1. Assist teachers with the integration of technology in the classroom, train teachers to use technology, assist with curriculum development as it relates to educational technology, modeling instructional strategies with students, providing training and professional development, collaborative teaching, researching technology-based instructional strategies, reviewing/evaluating technology software, offering direct assistance to teachers by way of classroom visitations, or similar kinds of duties and responsibilities as the school division may deem appropriate.	>=70%
2. Meet with administrators and content supervisors at the building and/or central office level to coordinate services and resources. Serve on building and/or division leadership teams relating to technology and instruction, professional organizations related to technology, and other responsibilities	<=15%
3. Create and implement a plan to communicate progress and activities to school, faculty, and administration. (i.e. newsletter, technology Web site, e-mail notifications)	<=10%
4. Minor troubleshooting of computer lab equipment, hardware or software problems.	<=4%
5. Maintain records necessary to document progress and activities.	<=1%

Factors that Foster Successful Technology Support

Support for technology integration does not stop with the hiring of an ITRT. Filling the position is only one of the many elements that should be in place as part of a comprehensive and effective program of technology support. The following factors should be considered as part of the implementation process.
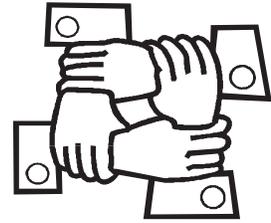
Job Description

A clearly written statement that defines the scope of the position, qualifications, requirements, major duties, and outlines the expectations helps prospective employees gain a more accurate understanding of what they would be expected to do on the job. In addition, the job description provides a catalyst for the examination of activities.

Communication

Clear channels of communication should be defined. Who does the position report to? When? How often? What actions need prior approval? How does the ITRT communicate with teachers, administrators and other educators?

Technology

What technology is available for use by the ITRT? Does it support training, demonstration, and consulting needs? Is the equipment mobile? Is it current technology? Is there equipment in classrooms or labs? Are there teacher work stations?

Fiscal Resources

Are funds available to purchase software, consumable materials, for incentives, substitutes, and acquisition of emerging technologies?

Planning

Is there time available during the school day to plan with teachers? Meet with administrators? Are there scheduled planning times with other ITRTs? Are provisions made for training opportunities for the ITRTs?

Time

Typically the ITRT is hired on a 10, 11, or 12-month contract. This allows time for summer training opportunities, time to develop new initiatives, and research technology-based instructional strategies. Refer to Time Management, pg. 9.

Supervision and Evaluation

This will vary among school divisions. In some instances the ITRT reports to the principal, in others to a division administrator. In any event the following questions should be answered: Who does the position report to? When? How often? What actions need prior approval? What is the method of performance evaluation? Who will be responsible for that evaluation, building-level administrator or central office official?

Program Evaluation

Program evaluation is carefully collecting information about a program or some aspect of a program in order to make necessary decisions about the program. Activities and processes should be examined periodically to determine their effectiveness.

The Instructional Technology Resource Teacher AND THE.....

The ITRT has varied responsibilities. In order to carry them out it may be necessary to work with educators other than the classroom teacher. The principal, resource teacher, library media specialist, and central office administrators have direct or indirect responsibilities for student achievement. The ITRT works with each one of these individuals within the context of their responsibilities. The following scenarios provide an example of ways in which the ITRT communicates and interacts with various educators.

Teacher, Library Media Specialist, Resource Teacher

The teacher-ITRT relationship is one of the most significant of all the relationships, due to the immediate impact on classroom instruction. It is not to say that it is the single most important or that the other relationships are unworthy of the time and energy of the ITRT, but with regards to impacting student performance, this is where "the rubber meets the road." As a point of reference, when the word "teacher" is used, this would include all classroom teachers, talented and gifted (TAG), special education, librarians, and general education teachers across all grade levels and content areas.

Scenario #1

Mr. Jones is a sixth grade math teacher. He is about to introduce the study of plane figures to his students. He wonders how technology may be useful to help his students master this concept. He has very little experience with technology in the classroom. He does use a word processor on a regular basis and has attended a workshop on how to use a database. He is interested in using technology and approaches the ITRT for help. What approach should the ITRT take?

The ITRT must understand what goes on in the typical classroom from the teacher's point of view, including lesson plan development and subject matter knowledge, assessment

strategies, daily scheduling constraints, classroom management challenges, and all of the professional demands for accountability that go with being a teacher. The ITRT is the bridge between the teachers' classroom world of textbooks and lessons and the technology world of software and hardware. The conversation could begin with a discussion of the SOL to be addressed, what should the students know and should be able to do once the lesson has been taught. Sometimes starting at the end and working backwards helps to clarify the task and how students will accomplish it. The ITRT may suggest that the students use a database to record information about plane figures: their characteristics, similarities, differences, purposes, and other topics. Mr. Jones may ask the ITRT to teach the lesson, as this is the first time that he's attempted to use technology as a tool in instruction. Or, it may be that the students will need instruction on using a database. In addition the ITRT may share resources such as streamed video clips or Web sites that present visual examples of planes. The ITRT could also provide examples of how the students can use technology to communicate what they have learned. A follow-up conversation should be planned to evaluate the activity. This is the time to identify what worked and what didn't; and other opportunities for technology-based lessons.

Scenario #2

Mrs. Johnson is a veteran science teacher with 25 years experience. She teaches physics and chemistry. She knows the textbook from cover to cover. She tried using probeware once but the "thing didn't work right". She feels that there is no need to use technology in her instruction and besides using technology takes too much time to learn and use and it doesn't work! What approach should the ITRT use?

There will be many reluctant teachers, such as Mrs. Johnson, in schools. However, the ITRT will have to work with the reluctant as well as the enthusiastic teacher users of technology. The ITRT will have to exercise care and caution "converting" Mrs. Johnson to be a technology user. One approach may be a demonstration of a piece of new software before a group of science teachers, followed by individual instruction. The software could address an SOL that represents a challenge to teach. The application chosen should be very user-friendly to maximize the chances that Mrs. Jones would be successful using it. Another approach may be creating a "buddy" system, pairing Mrs. Jones with a science teacher who uses technology successfully in the classroom. This conceivably could be accomplished with a project-based lesson that involves two or more classes! As in the previous scenario, evaluation and follow-up should take place to ensure continued and appropriate use of technology.

Scenario #3

The ITRT approaches Mrs. Brown, the library media specialist, with an idea to collaborate on a lesson with an eighth grade English teacher. The teacher is planning a unit of study on oral language where the students will analyze a variety of informational sources on a topic and present their findings. The objectives of the unit are to analyze the author's credentials, viewpoint, and impact; details for relevance and accuracy; and choice of text structure and word choice. The ITRT will assist the teacher in writing a lesson plan that involves the use of the Internet to meet the objectives. Mrs. Brown will engage the students in activities that have them examining and evaluating Web sites on the assigned topics for authenticity, accuracy, and relevancy. They decide that the students will use presentation software to communicate their findings. The library media specialist selects some Internet sites and subscription Web-based resources as examples for the students to critique. The three may take a team approach to teach the students how to use the presentation software. Together the ITRT, teacher, and Mrs. Brown decide what will be the evidence of student learning. After the lesson, the ITRT, Mrs. Brown, and the teacher evaluate the learning experience to determine if the strategies resulted in student mastery of the content.

Central Office

The ITRT may serve as a link between the central office and the school. In this capacity, the ITRT assists with the implementation of school division technology initiatives at the building level, provides professional development that supports the vision, mission, and goals of the division technology plan, and uses integration strategies that are congruent with the division curriculum and aligned to the SOL. The ITRT regularly communicates with division administrators, attends meetings, and participates on committees to represent educational technology integration.

Scenario #4

Dr. Mayo, the assistant superintendent of instruction, was impressed by a demonstration of a computer language arts program. She feels that the program addresses some of the remediation needs in ABC Elementary School. Dr. Mayo acquired a demo copy of the program and asks the ITRT at ABC Elementary School to take a look at the software and make a recommendation. What approach would the ITRT take?

The ITRT often reviews and evaluates software and makes purchase recommendations. Using standard criteria, the ITRT examines the software and notes its alignment with the school's curriculum and the SOL. The ITRT then prepares a written evaluation of the software that includes: the SOL addressed by the software, instructional strategies for remediation, and an outline of a process to train teachers to integrate the software in instruction. The response should also include how the use of the software will be evaluated to determine if the objectives for remediation were met. If the software is costly, the ITRT recommendations may include a pilot use of the software or the names of comparable software already owned by the school.

Building level administrators

The ITRT keeps the principal up-to-date with the latest innovations technology has to offer for student achievement and teacher productivity; helps the schools develop and implement short-term and long-term learning strategies for student achievement objectives through the use of technology; provides technology integration staff development for the faculty; creates and demonstrates model teaching using technology. Though not an administrator, there are administrative duties allied with the position that must be carried out successfully. The ITRT prepares reports for the building administrator. The reports may be bi-monthly or quarterly. They detail progress of integration activities, number of classroom visitations, future objectives, resources needed, successes, and opportunities for growth.

Scenario #5

Mrs. Hutcheson, the middle school principal, is concerned that all students are not having opportunities to use technology in learning. She directs the ITRT to bring her some ideas for ways that all students will have technology-based experiences. What approach does the ITRT take?

The ITRT begins by contacting the Technology Support individual to access an inventory of equipment and infrastructure capacity; making classroom visits to determine the frequency that technology-based lessons are being taught and develop an awareness of teacher and students' computer literacy level; and identifying resources that include technology-based lesson plans aligned to the curriculum and SOL. Armed with this information the ITRT begins to develop a picture of what technology-based learning experiences students do have, when they occur, under what conditions, and what software and hardware are available. Based on the information gathered, the ITRT will present to the principal a school-wide plan with a time-line for implementation

and evaluation that provides technology-based instruction for all students. The plan includes the resources that will be necessary as well as training, hardware, software, and infrastructure needs.

Evaluation and Supervision of the ITRT

The supervision and evaluation of the instructional technology resource teacher will depend largely on the organizational structure of the school division and the number of ITRTs. Some divisions may have an ITRT in each school, while in other school divisions more than one school shares the position. In the former situation the principal may supervise the ITRT. In the latter situation a central office administrator may supervise the ITRT. In either case, some type of performance expectations should be developed and mutually agreed upon. The evaluation should be based on policies currently in place with respect to the timing and frequency. Supervision and evaluation plans should include interim conversations to assess progress, identify challenges, and if necessary reorder priorities. The evaluation may be in the form of a checklist, rubric, or modeled after an existing tool used for resource teachers.