

“SCOPE ON A ROPE” The Microscopy Connection

Cindy Henk, James Wandersee, Marshall Sundberg and Harold Silverman (Louisiana State Univ.), and Jo Garner (Westminster Elementary School).

We have acquired and made available for loan a durable, easy-to-use, though expensive video-probe microscope. This hand-held, automatically focussing instrument can be used by a 5 year-old and provides instant, excellent, in-focus images of 50X to 200X on a video screen visible simultaneously to all students in the class.

The probe consists of a miniature video camera with interchangeable magnifying “objective” lenses which are surrounded with built-in, cool, fiber-optic illumination. Each lens is capped with a “contact tip” which corresponds to the focal length of the lens and which, when touching the sample, provides automatic focus of the image on the monitor. The images can be videotaped in the normal fashion.

The probe can function both as a compound and as a dissecting microscope, and can be used to examine classically prepared samples and slides. Since the sample does not have to be placed on a microscope stage, however, the sample size is unrestricted, and the only requirement for an in-focus image is an accessible contact spot. Little if any preparation of the sample is necessary or even desirable, so that the students may instantly associate the altered (magnified) aspect on the monitor with the previously familiar object. This instant intellectual gratification frees the teacher from technical difficulties normally encountered with school microscopes, and eliminates the need to assist individual students while effectively occupying the rest of the class.

The university laboratory, which houses and maintains the video-probe, is a microscopy research laboratory with no special allotment of personnel, financing or time for managing its use. The only maintenance necessary is an occasional light bulb change, however, and schoolteachers themselves can find plenty of ways to use the instrument once they know how. Therefore,

management of the one probe available for loan is not overly troublesome to the lab. When the probe is not out on loan, it is used in the facility, especially for tours.

K-12 teachers easily learn how to use the video-probe by borrowing and viewing our video-taped demonstration at their convenience. Upon return of the tape they assemble and demonstrate the unit in the presence of our personnel, then borrow the probe for use in their own classrooms. Extremely enthusiastic students examine samples ranging from their own fingerprints and clothing (on TV) to pond water, prepared microscope slides and microscopic polarizing light phenomena.

Teachers at all grade levels report unqualified success with classroom use of the instrument. Biology teachers in particular are struck with the increased interest students show for their conventional microscopes once the “microscopy connection” has been made.

The video-probe microscope has been marketed primarily as an instrument inspection device. It is also finding use in forensics and research.

There are four manufacturers known to us. Sales representatives familiar with our education applications are:

Michael Zeanah (KEYENCE): (404)451-6161

Tony Rauschuber (MORITEX): (214)406-8881

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Matt Irwin (HI SCOPE): (516)773-4305

If you should wish to contact any of the authors about specific issues, please do. We would be happy to hear from you.

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Jo Garner (Second grade teacher, methods evaluator, and regular user of video-probe at grade school level): (504)752-7966.

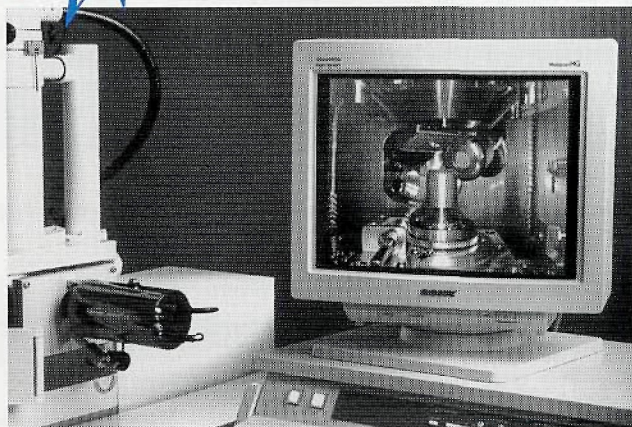
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