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AUTHOR   Turner, Gordon; And Others
TITLE   Hi-Res Electronic Design. Courseware Evaluation for
                Vocational and Technical Education.
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                Research in Vocational Education.
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                058.
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EDRS PRICE   MF01/PC01 Plus Postage.
DESCRIPTORS   *Computer Software Reviews; *Courseware; *Diagrams;
                Drafting; *Electronics; *Engineering Graphics; High
                Schools; Instructional Material Evaluation; Trade and
                Industrial Education

ABSTRACT
        This courseware evaluation rates the Hi-Res
Electronic Design program developed by Avant-Garde Creations. (The
program--not contained in this document--is designed to determine
closure and area of a su.vey.) Part A describes the program in terms
of subject area (schematic diagrams and symbols) and hardware
requirements (Apple II, color monitor, data disk, and mouse, paddle,
or joystick), indicates its suitability for use in grades 9-12, and
gives a time estimate (45 minutes and up). Availability information
includes backup and preview policy and contact address. Part B
contains the evaluation criteria in eight categories; reviewer
ratings appear as yes, somewhat, no, and not applicable, with
explanatory comments. Part C summarizes the evaluation. Yes ratings
were given for subject matter, technical presentation, student
interaction, and application programs; somewhat for documentation and
work behaviors; program interaction and student evaluation were not
applicable. Reviewers noted that the program uses graphics well to
teach symbols and makes schematic diagrams easier, but that printing
is difficult and documentation weak. The program is recommended as
unique, but awkward to use. (SK)

HI-RES ELECTRONIC DESIGN.

COURSEWARE EVALUATION

FOR

VOCATIONAL AND TECHNICAL EDUCATION
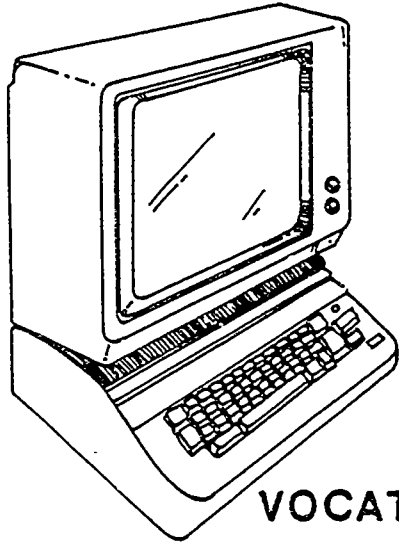
The evaluation of this courseware program was conducted by a team participating in the Courseware Evaluation Network. The Network, established in 1985, is coordinated by the National Center for Research in Vocational Education under the sponsorship of the U.S. Department of Education, Office of Vocational and Adult Education. The purpose of the Network is to identify and evaluate microcomputer courseware, and to disseminate courseware reviews for vocational and technical education.

Each Network team includes three members, at least one of which is, or recently has been, a vocational or technical teacher in the subject matter area of the courseware being evaluated. The evaluation represents a synthesis of the opinions of the team members. It is suggested that the evaluation be used as a first screening device for courseware and that the teacher also evaluate the courseware program on the basis of specific student needs.
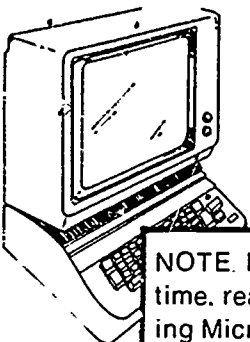
The Courseware Evaluation: Form and Guide used for all of the Network evaluations was developed by the National Center and is available through its cost-recovery system.

THE NATIONAL CENTER
FOR RESEARCH IN VOCATIONAL EDUCATION
THE OHIO STATE UNIVERSITY
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COURSEWARE EVALUATION FORM

NOTE. If you are using this form for the first time. read the instructions in the accompanying Microcomputer Courseware Evaluation Guide.

Evaluator __Gordon Turner; James Goldstine__
__Earl Gates.__
Position _____
Date_____5/87_____

Part A: Courseware Description

In the following sections. record descriptive information about the courseware that you are evaluating.

I. IDENTIFICATION

Program Title___Hi-Res Electronic Design._____ Date ____1982____

Series Title _____

Vocational Area(s) ____Trade and Industrial Education_____

 Subject Area(s) ____Electronics_____

 Topic(s)_____Schematic Diagrams and Symbols_____

Developing Agency _____Avant Garde Creations_____

 Street or P.O. Box ___P.O. Box 30160_____

 City_Eugene,_____ State_OR.____ Zip_97403__ Phone(503) _345-3043___

 Author(s)_____Don Fudge_____

 Programmer(s) _____

II. HARDWARE REQUIREMENTS

Microcomputer* _____Apple II Series_____
         (brand/model)

K Memory Required_____48K_____
      (number)

Medium of Transfer (include number of each):
___ Tape cassette   _X_5¼" Flexible disk   ___ Other_____
___ ROM cartridge   ___ 8" Flexible disk   _____
                     (specify)

Programming Language ___Apple Software___ DOS Specifications ___3.3_____

Other Specifications _____

Peripherals Needed (check all that apply):
_X_ Color monitor	___ Modem	___ Clock
_X_ One disk drive	_X_ Mouse	___ Video disk
___ Two disk drives	_X_ Printer	___ Touch screen
___ Plotter	___ Graphics tablet	___ Ten-key number
_X_ Game paddle(s)	___ Light pen	pad
_X_ Joystick(s)	___ Voice/sound	___ Other_____
	instrument	(specify)

*NOTE: Provide the above information for any additional hardware on which this program can be used._____

_____

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III. PROGRAM FEATURES (check all that apply):

_ Network version provided   _X_ Program protected
_ Multiple copies required   _X_ Data disk needed
_X_ Program can be modified   _X_ Field-test data available

IV. INSTRUCTIONAL SETTING

Program mode (check all that apply):

_X_ Application   ___ Educational   ___ Tutorial
___ Drill and practice   gaming   ___ Other _____
     ___ Simulation   (specify)

Student Target Population (check all that apply):

_X_ Regular   ___ Handicapped   ___ Bilingual
___ Disadvantaged   ___ Limited English   ___ Gifted

Grade Level (check all that apply):

___ K-6   _X_ 9-10   ___ 13-14   ___ Higher
___ 7-8   _X_ 11-12   ___ Adult   Education

Instructional Grouping (check all that apply):

_X_ Individual
___ Small Group (up to 4)
___ Large group (4 or more)   ___ competitive interaction
     ___ cooperative interaction

Prerequisite Student Skills (specify) <u>Some knowledge of Electronic Symbols.</u>

Accompanying Materials (specify types):
Documentation <u>11 page manual</u>

Student support materials _____

Teacher support materials _____

Correlated materials _____

Estimated Time for Use <u>Variable task oriented, 45 minutes and up.</u>

V. AVAILABILITY

___ Free_____   _X_ Sale S_____
(copies)

     ___ Rent S_____ _____
     (time)
___ Loan_____
(time)
___ Duplication (requestor supplies disk)

Copyright Restrictions (explain) <u>Copyrighted.</u>

Back-up Policy (explain) <u>Available at nominal cost.</u>

Preview Policy (explain) <u>30 days</u>

Update Policy (explain) _____

Contact <u>Avant Garde Creations</u>

Street or P.O. Box <u>P.O. Box 30160</u>

City <u>Eugene,</u> State <u>OR.</u> Zip <u>97403</u> Phone (503) <u>345-3043</u>

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Part B: Courseware Evaluation Criteria

Indicate the applicability of each section to the courseware being evaluated by checking either "___ A" (applicable) or "___ N/A" (not applicable). If a section is not applicable, proceed to the next section. If a section is applicable, check the column that indicates how well the courseware meets each criterion. Include any comments.

	YES	SOME-WHAT	NO	N/A	COMMENTS
I. SUBJECT MATTER _X_ A ___ N/A					
1. Subject matter has educational value.	X				
2. Student objectives are stated.			X		
3. Subject matter is accurate.	X				
4. Subject matter is logically presented.	X				
5. Subject matter is free of race, ethnic, sex, and other stereotypes.	X				
6. Subject matter is on the level of the students.	X				
7. Information and skills presented are comparable to those used in the home, business, or industry.	X				
8. Subject matter motivates students to learn.	X				
9. Subject matter is reviewed and summarized.			X		
10. Program utilizes the unique capabilities of the microcomputer to present the subject matter.	X				
II. TECHNICAL PRESENTATION _X_ A ___ N/A					
1. Program is free of technical problems.	X				
2. Presentation rate is adequate to maintain interest.	X				
3. Information on the screen is easy to read.	X				
4. Program is free of spelling and grammatical errors.	X				
5. Program instructions are easy to follow.	X				
6. Color increases the instructional value of the program.		X			
7. Audio increases the instructional value of the program.			X		
8. Graphics increase the instructional value of the program.	X				

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	YES	SOME-WHAT	NO	N/A	COMMENTS
III. STUDENT INTERACTION __X_ A ___ N/A					
1. Students can use the program with minimal assistance.	X				
2. Students are actively involved in the program.	X				
3. Students control the pace of the program.	X				
4. Students can access the program "menu(s)" to change activities.	X				
5. Students are permitted to change answers.				X	
6. Methods of responding correspond to the level of the program.	X				
7. Students' errors of entry are processed so that the program continues to run.				X	
8. Students can access available "help" and "hint" options at any time.	X				
9. Students can enter or exit the program as desired.	X				
10. Students control the sequence of the program.	X				
IV. PROGRAM INTERACTION ___ A __X_ N/A					
1. Feedback is immediate.					
2. Cues and prompts are provided to assist students in answering correctly.					
3. Feedback reinforces the correct responses.					
4. Feedback is nonthreatening.					
5. Program helps students understand wrong answers.					
6. Program gives the correct answer after a reasonable number of tries.					
7. Positive reinforcement is varied.					
8. Program has the ability to branch/loop depending upon students' performance.					
9. Feedback is on the level of the student.					
V. STUDENT EVALUATION ___ A __X_ N/A					
1. Evaluation provides a means for measuring attainment of objectives.					
2. Program reports which items were missed and which were correct.					

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	YES	SOME-WHAT	NO	N/A	COMMENTS
V STUDENT EVALUATION—Continued					
3 Individual student performance results are available to the teacher					
4. Class performance results are available to the teacher					
5 Program provides for printed copies of evaluations.					
6. Test item formats are suited to the material being tested.					
7. Test items are clearly stated.					
8. Test item bank is provided.					
VI. DOCUMENTATION _X_ A __ N/A					
1. Documentation is easy to understand.		X			
2. Documentation is accurate.	X				
3. Student objectives are stated.			X		
4. Underlying concepts are outlined.			X		
5. Skills to be developed are specified.			X		
6. Procedures for integrating the program into the curriculum are provided.			X		
7. Follow-up activities are suggested.			X		
8. Documentation explains the intended use of support materials.				X	
9. Sufficient information is provided to operate the program.	X				
VII. WORK BEHAVIORS _X_ A __ N/A					
1. Program helps students identify their vocational skills.	X				
2. Program promotes pride in work.			X		
3. Program promotes productivity.			X		
4. Program encourages good work habits.		X			
5. Problem solving is encouraged.		X			
6. Program promotes good human relations skills.			X		
7. Program provides an opportunity for work satisfaction and self-fulfillment.	X				
8. Program encourages creativity.	X				

	YES	SOME-WHAT	NO	N/A	COMMENTS
VIII. APPLICATION PROGRAMS __XA __ N/A (to be completed for application programs only)					
1. Program is adaptable to the needs of the student.	X				
2. Commands are easily remembered.	X				
3. Information is easily manipulated.	X				
4. Corrections are easy to make.		X			Erasing an error
5. Program includes all necessary variables.	X				is tedious.
6. Program performs reliably.	X				
7. Program efficiently achieves its intended purpose.	X				
8. Trial data are supplied for learning to run the program.				X	
9. Program provides for use of printer when hard copy of information is advantageous.	X				
10. Program moves from operation to operation efficiently.	X				
11. Program is compatible with other application programs.				X	
12. Program has a supplementary tutorial program available.			X		

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1. SUMMARY COMMENTS

Identify strengths of the courseware.

> Graphics well used to teach symbols.
> Allows schematic diagrams to be made easier than many CAD programs.

Identify weaknesses of the courseware:

> Printing is difficult and documentation weak.

Describe uses of the courseware in an instructional setting:

> Electronics or Drafting.

2. SUMMARY OF SECTION

Rate the quality of the courseware for each applicable section of this form by checking the appropriate column; if not applicable, check N/A.

	YES	SOME-WHAT	NO	N/A
I. SUBJECT MATTER: Content has educational value.	X			
II. TECHNICAL PRESENTATION: Program is free of malfunctions.	X			
III. STUDENT INTERACTION: Students are actively involved with the program.	X			
IV. PROGRAM INTERACTION: Feedback is effectively employed.				X
V. STUDENT EVALUATION: Evaluation adequately measures student progress.				X
VI. DOCUMENTATION: Documentation is sufficient to run the program.		X		
VII. WORK BEHAVIORS: Program assists students in developing positive work attitudes and skills.		X		
VIII. APPLICATION PROGRAMS: Program performs the task for which it is intended.	X			

3. FINAL RECOMMENDATION

Check your recommendation for the courseware and explain your reasons below.

___ Highly recommend   ___ Recommend with reservations
_X_ Recommend   ___ Do not recommend

Unique, but awkward to use.