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General Education Teachers' Attitude Regarding the Use in Their Classes of Assistive Technology by
Students with Learning Disabilities

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ABSTRACT

The purpose of this study was to determine the general education teachers' attitude regarding the use in their classes of assistive technology by students with learning disabilities. A five-point Likert scale was used for this study. The participants were general education teachers from elementary and secondary schools in a southwest region on the Gulf Coast of Texas. The survey helped gather information to determine the attitudes of general education teachers regarding the use of assistive technology by students with learning disabilities in their classes. The hypothesis was that general education teacher' attitudes would be positive towards students with learning disabilities using assistive technology in their classes. The hypothesis was supported by the results of the study.

Teachers' Attitude Regarding the Use in Their Classes of Assistive Technology by Students with Learning
Disabilities

Background

The use of technology is growing rapidly in education as it is throughout society. The National Regional Laboratory for Research and Development discovered that educational technology is one of the six top issues in schools (Northwest Regional Educational Laboratory, 1995). Technology can help with

real world contexts that also engage learners in solving complex problems (Duffy & Cunningham, 1996; Honebein, 1996; Cognition and Technology Group at Vanderbilt, 1992).

Are schools using technology and keeping up with the new devices to help children of tomorrow learn? "Over the last 20 years, K-12 schools have spent millions of dollars equipping their schools with the latest technologies, but often without a thoughtful plan of how their use would impact learning and teaching" (Barnett, 2001). According to the National Center for Education Statistics report (U.S. Department of Education, 2000), many teachers do not know how to incorporate technology into their instruction. Many teachers do not feel like they are prepared or trained to use technology in their teaching (Lonergan, 2001). Teachers need to be trained and updated with respect to the uses of technology. "Technology by itself does not guarantee learning. Rather, it is in how teachers and students use available technologies that determines whether transformative learning happens" (Driscoll, 2002). As general education classrooms are becoming more inclusive, general education teachers need to become more aware and trained in the area of assistive technology.

"Technology provides the support needed to accomplish a task" (Quenneville, 2001). In order for some students with learning disabilities to accomplish a task, assistive technology is helpful with students. Assistive technology is "any item, piece of equipment, or product system (whether acquired off the shelf, modified, or customized) that is used to increase, maintain, or improve functional capabilities of individuals with disabilities" (Behrmann, 1995). Examples of assistive technology are graphic organizers, cassette recorders, hand-held calculators, augmentative communication devices, and instructional software. Devices and services of this technology has been shown to enhance the performance of students with disabilities by helping them to complete tasks more efficiently and independently (Edyburn, 2000).

Inclusion

There are many ways inclusion benefits students with learning disabilities. One way is assimilation into the general classroom, which allows students with learning disabilities to feel part of the general classroom consisting of students without learning disabilities. Another benefit of inclusion is through academic skill acquisition. The students will have an opportunity to learn new skills that may not be taught in special education classrooms. Students with learning disabilities have a better chance at becoming proficient in these subjects. "The amount of time engaged in learning is increased for students without disabilities and for those with milder disabilities. Also, students with disabilities spend more time engaged in learning in regular education classrooms than in special settings" (D'Alonzo, 1997). Inclusion also helps with social skill acquisition. Behaviors and social skills from students with disabilities have been shown to improve when they are in general classrooms versus in special education classrooms (Cole & Meyer, 1991). Students without learning disabilities are more likely to be accepting and willing to help students with learning disabilities. Results were reported that when students without learning disabilities are willing to help students with disabilities there were more positive attitudes from students without disabilities, there was an increase response to the needs of others, and increased appreciation for diversity (D'Alonzo, 1997).

Administrators play an essential role in an inclusion program. They should be supportive for all teachers. Collaboration between general and special education teachers is very important for a successful program for all students. Teachers have to work together to "assess student needs, teach in productive ways, and monitor student progress" (Tralli, 1996).

Assistive Technology

Assistive technology is continuously rising in our schools and classrooms. Teachers are becoming more aware of different devices to be used by students with learning disabilities. Application of technology is a high priority need for teacher education (Plotnick, 1996). "School district personnel must

ensure that assistive devices and services are available as a special education service, supplemental aide, related service, modification, or accommodation if they are deemed necessary for guaranteeing a free, appropriate public education" (Bowser & Reed, 1995). IDEA mandates that assistive technology be considered in developing IEPs for all students with disabilities, whether it be in organization, note taking, writing, academic productivity, access to reference and general education materials, and/or cognitive assistance (Behrmann & Jerome, 2002). Schools are required to provide assistive technology for students who need such tools, if they are necessary (Edyburn, 2000). Technology is recommended to help students with learning disabilities achieve challenging curriculums. An example of assistive technology in the classroom is a student will listen to a novel that is a compact disc or cassette. Another example is when the student is given instructional software to follow along with the lesson/discussion being discussed in the classroom. It is important for general education teachers utilize devices to help students with learning disabilities, including assistive technology to compensate for their specific learning disabilities. It is essential for teachers to know how to use technology and how to integrate it into the curriculum (Kosakowski, 1998). Assistive technology assists with students' frustration, increases motivation, fosters a sense of peer acceptance, and improves productivity in the classroom (Quenneville, 2001). "Teachers must select technology adaptations appropriately, and monitor and evaluate the use of these adaptations in classroom activities to determine their educational benefit for students with learning disabilities" (Bryant & Bryant, 1998).

Purpose of Study

This study was developed to seek and evaluate general education teachers' attitudes regarding the use in their classes of assistive technology by students with learning disabilities. Specifically, the researchers wanted to find out what the general education teachers' attitude was regarding the use in their classes of assistive technology by students with learning disabilities.

Participants

Participants were 29 general education teachers from a small suburban school in the southwest. Twenty-three of the participants were female and six were male. All 29 of the participants taught in an inclusion classroom. Seventeen of the participants held a Bachelor's degree, while 12 held a Master's degree. Two of the teachers taught for 0-3 years. Five of the teachers had 4-7 years of teaching experience. Five of the teachers taught for 8-11 years. Six teachers have taught for 12-15 years. Eleven of the teachers had 16 or more years of teaching experience. There were a total of four schools involved in this study.

Instrumentation

The teacher-researcher developed a questionnaire survey that was utilized as an assessment instrument . There were 20 questions asked about the use of assistive technology. The researcher gathered information regarding the general education teachers' attitude on the use in their classes of assistive technology by students with learning disabilities. The instrument was field tested on general education teachers that were graduate students.

Procedure

First, the researcher passed out the surveys to all grades, four through twelve general education teachers. The surveys were put in each general education teachers' mailbox on their specific campus. A period of one week was given for surveys to be completed and returned to the researcher's campus mailbox. The teachers were able to choose to not complete the survey. Each teacher responded on the survey itself. The teachers responded to items using a five-point Likert scale. The Likert indexes used were strongly agree, agree, neutral, disagree, and strongly disagree.

Analysis

Quantitative information was used to analyze the data from the surveys to determine what the general education teachers' attitude on the use in their classes of assistive technology by students with

learning disabilities. All of the participants fully completed the survey. No item responses were left blank. Frequencies, means, and standard deviations were used to assess the teachers' responses.

Results

A summary of the statistics from the general education teachers' attitude survey is presented in

Table 1. Frequencies of responses, means, and standard deviations are given.

Table 1

Summary of Survey Data

Item	% SA	% A	% N	% D	% SD	M	SD
1	62.1	27.6	10.3	0	0	1.48	0.69
2	3.4	0	20.7	37.9	37.9	4.07	0.96
3	55.2	34.5	10.3	0	0	1.55	0.69
4	44.8	37.9	13.8	3.4	0	1.76	0.83
5	27.6	31	24.1	13.8	3.4	2.34	1.14
6	17.2	44.8	37.9	0	0	2.21	0.73
7	20.7	48.3	27.6	3.4	0	2.14	0.79
8	13.8	58.6	24.1	3.4	0	2.17	0.71
9	13.8	55.2	13.8	13.8	3.4	2.38	1.02
10	10.3	41.4	34.5	10.3	3.4	2.55	0.95
11	17.2	58.6	24.1	0	0	2.07	0.65
12	31	51.7	17.2	0	0	1.86	0.69
13	34.5	44.8	20.7	0	0	1.86	0.74
14	31	58.6	6.9	3.4	0	1.83	0.71
15	24.1	55.2	17.2	3.4	0	2	0.76
16	27.6	58.6	13.8	0	0	1.86	0.64

Table 1 (completed)

Item	% SA	% A	% N	% D	% SD	M	SD
17	27.6	65.5	6.9	0	0	1.79	0.56
18	31	48.3	20.7	0	0	1.9	0.72
19	6.9	48.3	17.2	20.7	6.9	2.72	1.1

20 37.9 58.6 3.4 0 0 1.66 0.55

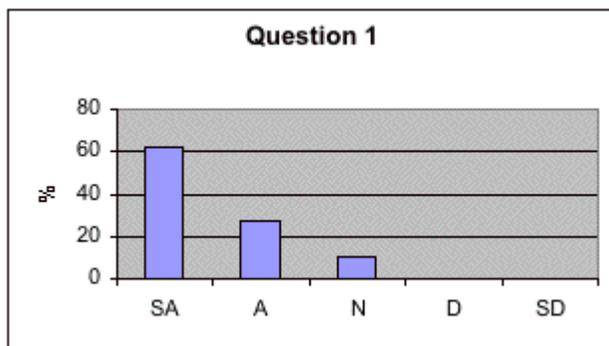
Note. SA = strongly agree, A = Agree, N = neutral, D = disagree, SD = strongly disagree.

All of the responses to the survey items were generally positive, where lower scores represent a more positive attitude. The item with the lowest score (most positive response) was item 1 ($M = 1.48$, $SD = .69$). The item with the highest score was item 2 ($M = 4.07$, $SD = .96$). Due to the wording of the question, the high score on item 2 also reflects a positive attitude.

Graph 1

Descriptive Analysis of Percent Responding to Question 1 in Survey

1. I think the availability of an AT device for students is important in my class.

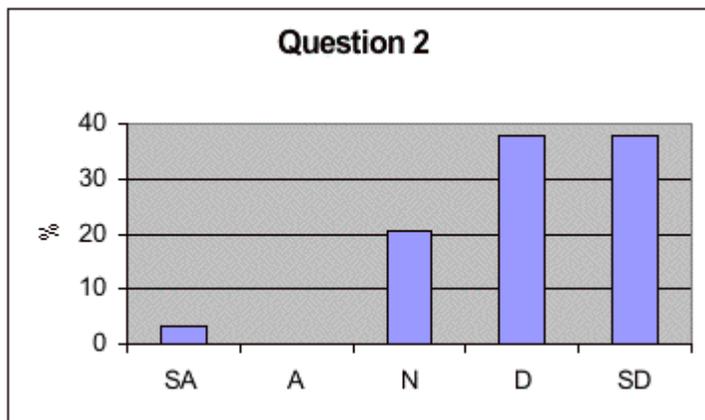


Based on the answers to survey question 1, 62.1 % strongly agreed and 27.6 agreed that AT devices were important in their classes. Only 10.3% were neutral.

Graph 2

Descriptive Analysis of Percent Responding to Question 2 in Survey

2. I think too much time is spent using AT devices in my class.

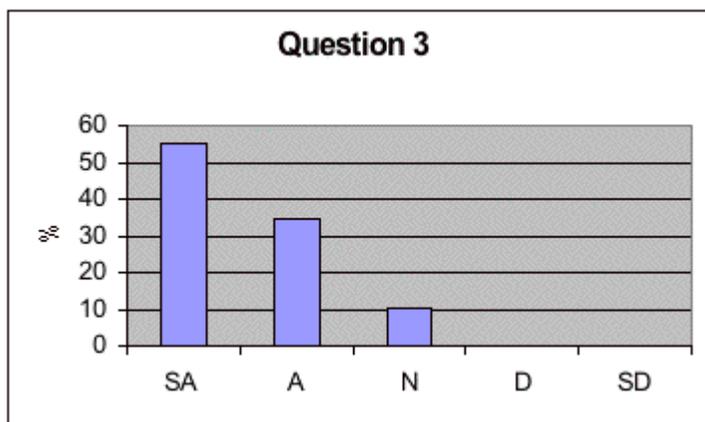


There were many participants that strongly disagreed (37.9%) and disagreed (37.9) that too much time is spent with AT devices being used in their classes. Only 3.4% strongly agreed with 20.7% being neutral.

Graph 3

Descriptive Analysis of Percent Responding to Question 3 in Survey

3. I think integrating technology into lessons for the student is beneficial in my class.

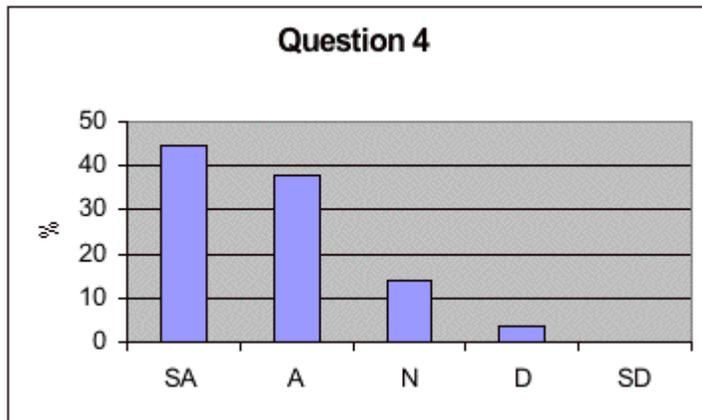


Many strongly agreed (55.2%) that integrating technology in their classes is beneficial and 34.5% agreed while 10.3% were neutral.

Graph 4

Descriptive Analysis of Percent Responding to Question 4 in Survey

4. I think adapting assignments for students is appropriate in my class.

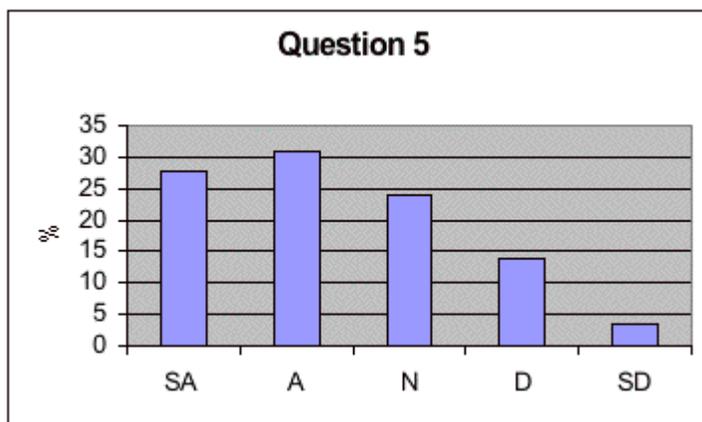


Overall most participants strongly agreed (44.8%) and agreed (37.9%) that adapting assignments is appropriate. A very small percent (13.8%) were neutral while 3.4% disagreed.

Graph 5

Descriptive Analysis of Percent Responding to Question 5 in Survey

5. I think there are a growing number of students in my class eager to use AT devices.

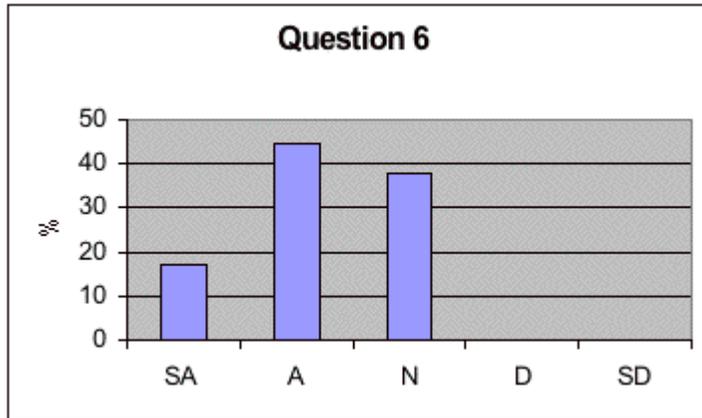


The participants in this survey indicated that 27.6% strongly agreed, 31% agreed, 24.1% were neutral, 13.8% disagreed and 3.4% strongly disagreed about the eagerness to use AT devices.

Graph 6

Descriptive Analysis of Percent Responding to Question 6 in Survey

6. I think students who use AT devices in my class will have higher achievement scores.

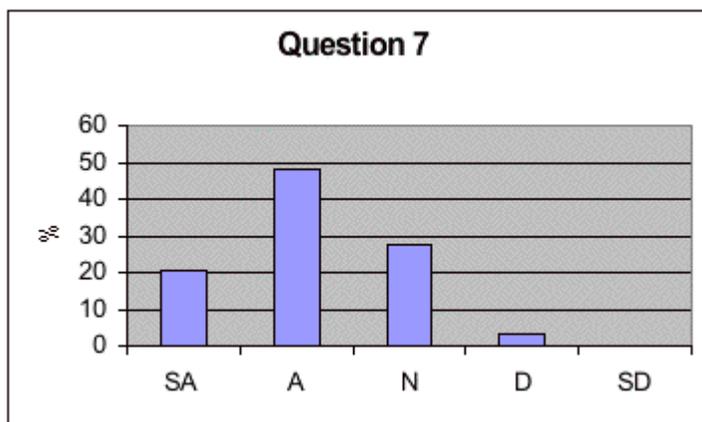


Majority of the participants agreed (44.8%) and were neutral (37.9%) while 17.2% strongly agreed that AT devices could produce higher achievement scores.

Graph 7

Descriptive Analysis of Percent Responding to Question 7 in Survey

7. I think AT devices used in my class will help students work towards independence.

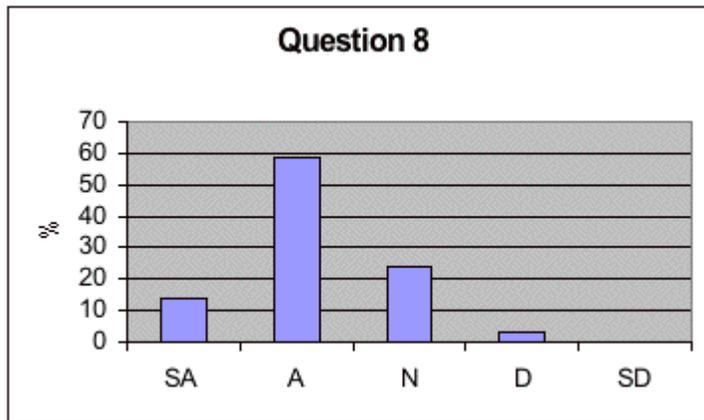


Most participants agreed (48.3%) that AT devices with help students towards independence, while 20.7% strongly agreed, 27.6% were neutral and 3.4% disagreed.

Graph 8

Descriptive Analysis of Percent Responding to Question 8 in Survey

8. I think students using AT devices in my class are able to identify their strengths and weaknesses.

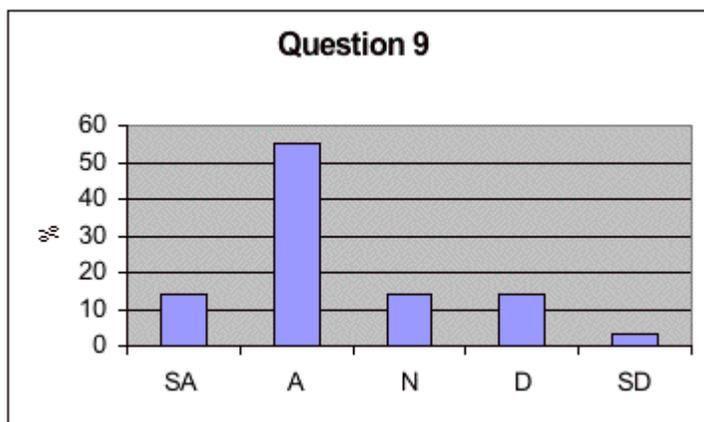


Based on the answers to survey question 8, 13.8 % strongly agreed and 58.6% agreed that AT devices are able to identify strengths and weaknesses. Only 24.1% were neutral, while 3.4% disagreed.

Graph 9

Descriptive Analysis of Percent Responding to Question 9 in Survey

9. I think the lack of training for teachers in using AT devices is a major barrier for students' success in my class.

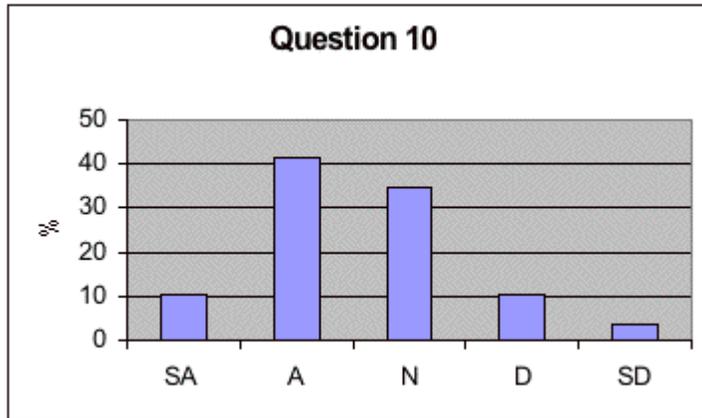


Many agreed (55.2%) that the lack of training for teachers is a major barrier for success of students in their classes. Some strongly agreed (13.8%), 13.8% were neutral, 13.8% disagreed and 3.4% strongly disagreed.

Graph 10

Descriptive Analysis of Percent Responding to Question 10 in Survey

10. I think administrators, teachers, and parents are helpful when I need help or explanation of AT devices for my class.

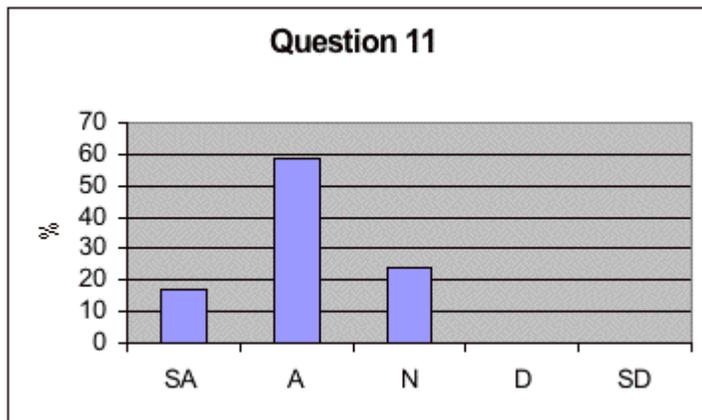


According to the answers of survey question 10, 41.4% agreed that administrators, teachers, and parents are helpful when they need help or explanation of AT devices for their class. 34.5% were neutral, 10.3% strongly agreed, 10.3% disagreed, while 3.4% strongly disagreed.

Graph 11

Descriptive Analysis of Percent Responding to Question 11 in Survey

11. I think students that use AT devices in my class are accepted among their peers.

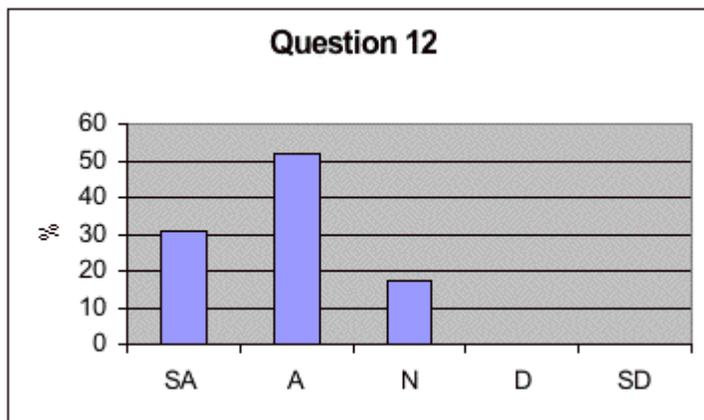


Many agreed (58.6%) agreed that students that use AT devices are accepted among their peers. 24.1% were neutral and 17.2% strongly agreed.

Graph 12

Descriptive Analysis of Percent Responding to Question 12 in Survey

12. I think AT devices are useful for all core academic classes.

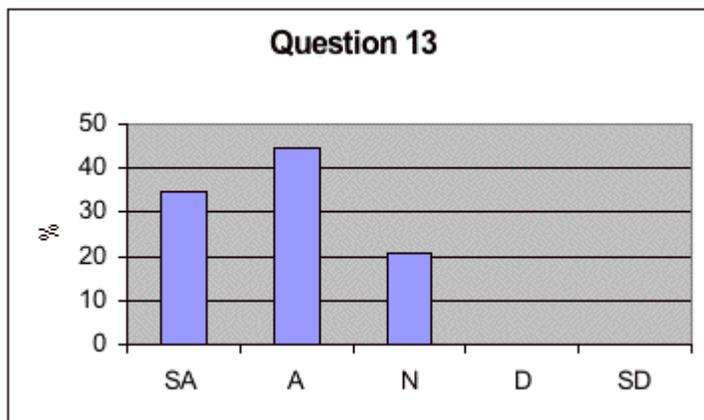


Many (51.7%) agreed that AT devices are useful for all core academic classes. Only 17.2% were neutral while 31% strongly agreed.

Graph 13

Descriptive Analysis of Percent Responding to Question 13 in Survey

13. I think AT devices help students with independent living skills.

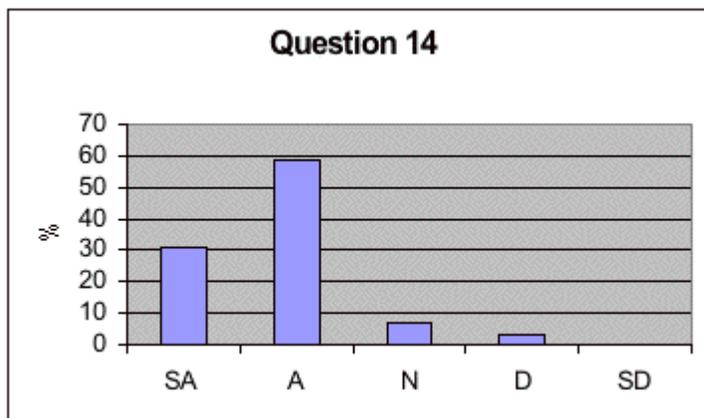


Many agreed (44.8%) agreed that AT devices help with independent living skills. 34.5% strongly agreed and 20.7% were neutral.

Graph 14

Descriptive Analysis of Percent Responding to Question 14 in Survey

14. I think AT devices help students with job skills.

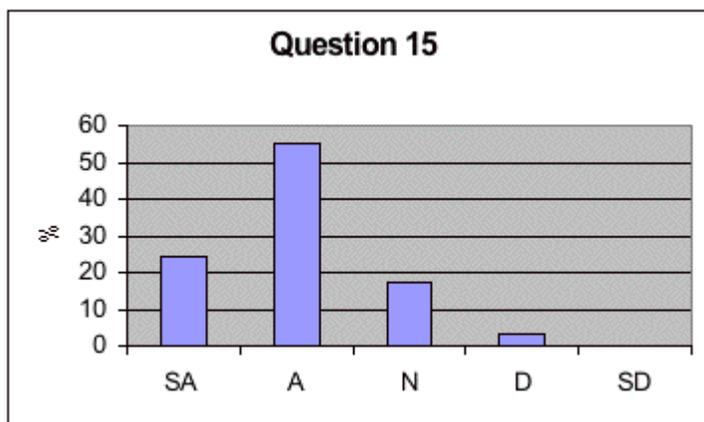


Many agreed (58.6%) that AT devices help with job skills and 31% strongly agreed while 6.9% were neutral and 3.4% strongly disagreed.

Graph 15

Descriptive Analysis of Percent Responding to Question 15 in Survey

15. I think AT devices help students with community skills.

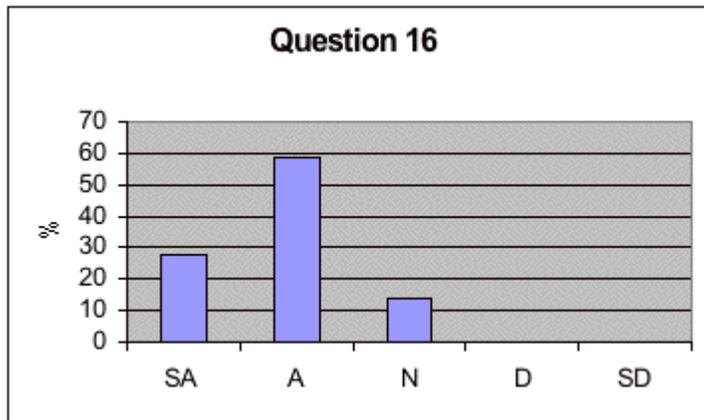


Many agreed (55.2%) that AT devices help with community skills and 24.1% strongly agreed while 17.2% were neutral and 3.4% strongly disagreed.

Graph 16

Descriptive Analysis of Percent Responding to Question 16 in Survey

16. I think AT devices help students accomplish their tasks in my class.

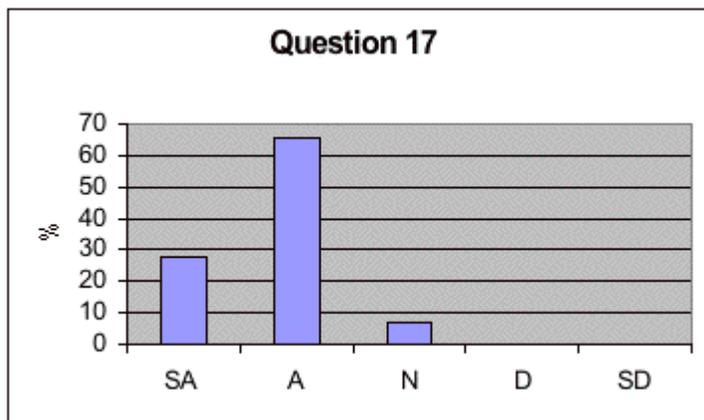


Many agreed (58.6%) that AT devices help accomplish tasks in class and 27.6% strongly agreed while 13.8% were neutral.

Graph 17

Descriptive Analysis of Percent Responding to Question 17 in Survey

17. I think AT devices used in my class are effective in the students' learning process.

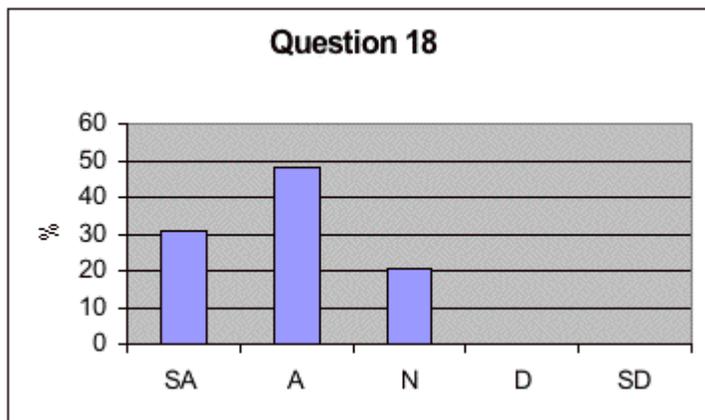


Many agreed (65.5%) that AT devices used are effective in the students' learning process and 27.6% strongly agreed while 6.9% were neutral.

Graph 18

Descriptive Analysis of Percent Responding to Question 18 in Survey

18. I think my classroom set-up is important for students who use AT devices.

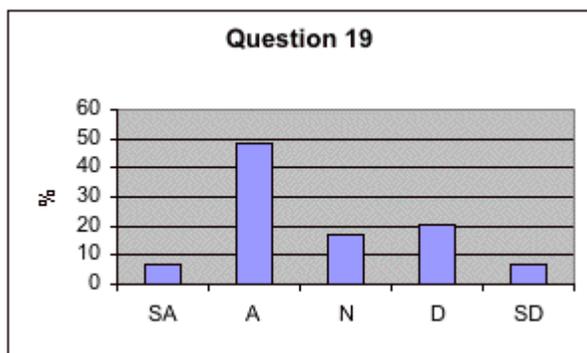


Many agreed (48.3%) that classroom set-up is important for students who use AT devices and 31% strongly agreed while 20.7% were neutral.

Graph 19

Descriptive Analysis of Percent Responding to Question 19 in Survey

19. I think there will be challenges to overcome to accommodate students who use AT devices in my class.

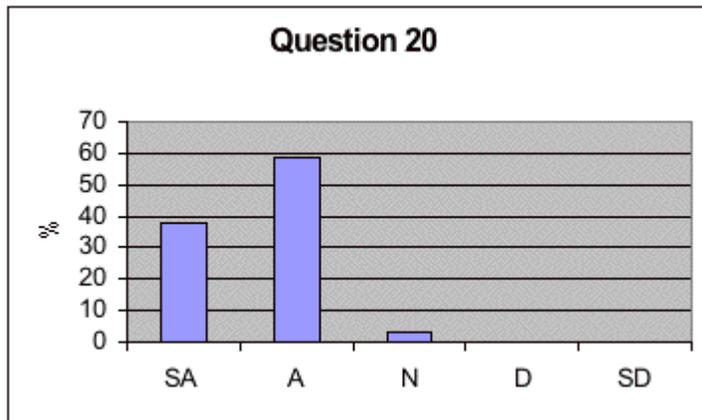


Many agreed (48.3%) that there will be challenges to overcome to accommodate students who use AT devices and 6.9% strongly agreed while 17.2% were neutral, 20.7% disagreed and 6.9% strongly disagreed.

Graph 20

Descriptive Analysis of Percent Responding to Question 20 in Survey

20. I think overall, AT devices used in my class are useful and helpful for students.



Many agreed (58.6%) that AT devices are useful and helpful for students and 37.9% strongly agreed while 3.4% were neutral.

Discussion

The hypothesis that general education teachers' attitude regarding the use in their classes of assistive technology by students with learning disabilities would be positive was supported. Kosakowski (1998) stated the essential need of teachers to use assistive technology. It appeared in the present study that teachers had a positive attitude toward incorporating assistive technology in their classrooms. The teachers' positive attitudes toward assistive technology may help with students' frustration, motivation, peer acceptance, and productivity in the classroom (Quenneville, 2001). Bryant and Bryant (1998) made a call for teachers to use assistive technology to benefit students. Teachers' positive attitude toward the use of assistive technology is essential for its successful use in promoting student success. From the present study, it appears that general education teachers have the positive attitude needed to successfully implement assistive technology in their classrooms.

The present study is limited by the small sample size and the use of volunteers. It may be that only general education teachers with positive attitudes towards assistive technology chose to complete and return the surveys. This study represents only a small number of general education teachers who

chose to participate. Future studies should include a larger, more diverse sample to determine general education teachers' attitudes toward assistive technology and the effects of such attitudes.

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