

## **Integrating Technology in Teaching Students with Special Learning Needs in the SPED Schools in Baguio City**

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### **Abstract**

Leading-edge creation and development of technologies including those for the children with special learning needs found common place in the educational system. Allowably, this study's focal point engages in the integration of technologies in the educational environments where students with special learning needs are housed. Respondents include 53 teachers employed in the special education schools in Baguio City, who were to determine the availability and effectiveness of technology in their schools and the problems encountered in the integration of technologies. Results indicate that availability and effectiveness of technologies are at limited level and that there are problems encountered in technology integration. This is significant for the achievement of the aim of students with special learning needs for they would be guided appropriately in the development of their skills with the challenges of educational attainment and life itself.

**Keywords:** Technology integration; Special education; Baguio City SPED schools; Students with special learning needs.

### **Introduction and Literature review**

Technology is a term that originated from the Greek word *technologia*, which is a combination of *techne*, meaning “craft” and *logia* meaning “saying”. As a result, technology might be considered the articulation of a craft. In a formal manner, it is a branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society and the environment, drawing upon such subjects as industrial arts, engineering, applied science and pure science (Random House Dictionary, 2013).

Technology, which is known to be a growing part of any society today pervasively, had brought significant changes in the different fields like health, medicine, entertainment, business, trade and commerce, leisure, etc. The use of technology is at least one unavoidable reality twenty years after the introduction of personal computer (Matulac, 2013). Moreover, Matulac (2013) stated that closing our awareness regarding the changes brought by technology would mean death especially to educators. Lensing into education, it is also a key factor on the radical changes in the educational system (Bates, 2011). It turned classroom environment from teacher-centered to student-centered one. It increasingly moved the boundary of educational resources. The use of computer has transformed the traditional concepts of education (Shirley, Philip & Jennifer, 2007) confirming the statements of historic educationists: Thomas Edison (1922) ‘motion pictures would replace textbooks in classrooms’, William Levenson (1945) ‘radio receivers would be as common in classrooms as the blackboard, and B. F. Skinner (1960s) ‘new technology devices would vastly increase students’ interest in learning’ (Norman, 1999). Researchers conducted worldwide indicate that using technology has a positive impact on teaching and learning (Almekhlafi & Almeqdadi, 2010).

Technology's use in education is becoming an increasingly important part of higher and professional education (Wernet, Olliges & Delicath, 2000). The U.S. Department of Education National Center for Education Statistics (NCES) (NCES, 2010) reported that novice teachers were more likely to use computers or the internet to accomplish various teaching objectives. The NCES (2000) cited by Rowand (2000), mentioned that 39% of the teachers surveyed use computers or the internet to create instructional materials, 34% used computers or the internet on administrative record keeping, and less than 10% have reported to access model lesson plans or research and best practices. Almekhlafi and Almeqdadi (2010) stated that teachers with utmost nine years of teaching experience were more likely to report using computers or the internet to communicate with colleagues compared to teachers with 20 or more years of experience.

Some reasons for teachers to use technology in classroom instruction are to promote student agreement, to teach 21<sup>st</sup> century skills, to stay current, to have hands-on interactive learning, to vary instructional methods, to conduct research, and to communicate (Hakverdi-Can & Dana, 2012; Hechter & Vermette, 2012a). As transformative tools, computer technologies can help all students develop their ability for structured yet flexible inquiry and investigation so that they can link ideas, explore solutions and examine consequences to create value from information (Donovan & Macklin, 1999). Kotrlik and Redmann (2005) pointed out the results of the National Center For Education Statistics (2000) survey to which: 44% reported using technology for classroom instruction, 42% reported using computer applications, 12% reported using practice drills, 41% reported requiring research using the internet, 20% required students to use technology to solve problems and analyze data, 27% had students conduct research using CD-ROMS, 27% assigned students to produce multimedia reports and projects, 23% assigned graphical presentations of materials, 21% assigned demonstrations or simulations, and 7% assigned students to correspond with others over the internet.

However, for many teachers, lack of personal experience with technology presents a challenge. In order to incorporate technology-based activities and projects into their curriculum, those teachers must first find the time to learn to use the tools and understand the terminology necessary for participation in those projects or activities (Starr, 2011). If these technologies are used properly, they can be a tool for teachers as well as for students to help them gain experiences using new technologies. In relation to special education, teachers will need to understand how technology can benefit student learning. Technology can allow teachers to access each and every child's individual learning style while providing a platform where students can work at their own pace. Technology can help teachers balance the limited instruction time by providing activities, project-based learning, and one-on-one coaching and peer support while making learning interactive and fun. Well-employed use of technology in the classroom can allow teachers to tailor learning to student's individual needs while freeing up classroom time, leaving teachers more time for projects, one-on-one coaching, and more creative activities (Starr, 2011).

Moreover, the use of technology needs to be re-conceptualized in areas such as students' and learners' roles in using technology, how technology fits into the curriculum, what teachers should know, how teachers will learn about technology, and how the impact of technology be assessed (Budin, 1999; Kotrlik & Redmann, 2005). As Matulac (2004) and Strommen and Lincoln (1992) mentioned, the key to success lies in finding the appropriate points for integrating technology into a new pedagogical practice, so that it supports the deeper, more reflective, self-directed activity children must use if they are to be competent adults in the future. Girgin, Kurt and Odabasi (2011) further mentioned that not only do teachers need to learn how to use technology but they also need to learn how to apply the technology to teaching and learning, where in they need to know which technologies will most effectively meet children's skills, abilities and needs.

There are really barriers that hinder the effective implementation of technology into classroom teaching and learning, such as factors like access, time, resources, training, attitudinal effects, beliefs, practices, institutional and administrative support, experience, and resistance are as well restraining forces to technology integration (Earle, 2002; Gulbahar, 2008).

The Philippine government initiated that by the end of 2009, there would be a: 1) provision of appropriate educational technologies to all public high schools; 2) provision of a computer laboratory with basic multimedia equipment to 75% of public high schools; 3) provision of electronic library systems to all public science-oriented high schools; 4) training of 75% of public secondary school teachers in basic computing and internet skills as well as in Computer-Aided Instruction (CAI); 5) integration of ICT in all learning areas, when appropriate; and 6) private sector support.

Technology is arguably even more relevant in special education than it is in general education because it makes the complex simple and it addresses the individual needs of the learner (The International Council for Education of People with Visual Impairment, 2007). Similarly, Johanson (1998) posited that to create learning activities and to set up inclusive learning environments that enable the child with disabilities to learn and play along with other children, technology is needed. In addition, Hasselbring and Glaser (2000), pointed out that technology has equalized holistic development by giving opportunities to children with disabilities, their families, and teachers. The integration of technology in teaching to Special Education and in learning has positive influences on students' motivation, attitudes, achievement, and peer interactions in the classrooms (Schofield, 1995). Hence, technology could enhance children's educational, social, and cultural experiences (Girgin, Kurt & Odabasi, 2011; Saba, 2009). Technology is then potential to become a vehicle to make education for all children with disabilities a reality in developing countries (ICEVI, 2007) like

the Philippines. Hasselbring and Glaser (2000) define technology for students with special needs based on federal laws as “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.”

Computer-based technologies’ integration into the classroom for regular students is recognized but few have come to the realization that there are great benefits that technologies may afford students with disabilities (Espique, 2009; Hasselbring & Glaser, 2000). A knowledgeable teacher who understands technology’s potential for education is involved in the effective technology implementation in the preschool special education classroom or in any classroom (Johanson, 1998). However, Espique (2009) pointed out that many teachers are not adequately trained on how to use technology effectively in their classrooms. Bauer and Kenton (2005) found that teachers, who were highly educated and skilled with technology, were innovative and adept at overcoming obstacles, but they did not integrate technology on a consistent basis both as teaching and learning tool.

Hasselbring and Glaser (2000) and Judge (2001) affirmed that the lack of appropriate technology training in pre-service and in-service teacher education programs is the most cited barrier in using technology in the classroom. They further added that the lack of adequate training has an especial strong impact on students with disabilities because technology is often a critical component in planning and implementing an educational program for them. According to Zhao (2007), most teachers were willing to use technology, expressed positive experiences with technology integration training, increased their use of technology in the classroom, and used technology more creatively.

Kolb (2012) explained that different people naturally prefer a certain single different learning style. Various factors influence a person's preferred style: notably in his Experiential Learning Theory

model (ELT) Kolb (2012) posited three stages of a person's development and suggests that our propensity to reconcile and successfully integrate the four different learning styles improve as we mature through our development stages. He as well mentioned that knowing a person's (and your own) learning style enables learning to be orientated according to the preferred method. That said, everyone responds to and needs the stimulus of all types of learning styles to one extent or another – it is a matter of using emphasis that fits best with the given situation and a person's learning style preferences. In special education, many are limited to direct experience as a part of learning due to some limitations that they acquire. But with the help of technology, experiential learning takes place. In addition, with technology the child with special learning needs will be able to gain a more concrete and more real scenario of what is learned inside the four corners of the classroom. Further, Kolb (2012) mentioned that “learning is the process whereby knowledge is created through the transformation of experience.” Thus, transformation of the teaching learning process in the classroom of children with special learning needs could be well acquired through the integration of technology.

Theory of Planned Behavior or Reasoned Action highlights the person's behavior determination through his or her intention to perform the behavior and that this intention is, in turn, a function of his/ her attitude toward the behavior and his/ her subjective norm. Moreover, intention is the cognitive representation of person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior. To predict someone's intentions, knowing these beliefs can be as important as knowing the person's attitudes. Finally, perceived controlled behavior control influences' intentions that refers to people's perceptions of their ability to perform a given behavior. In the integration of technology in teaching students with special learning needs, the teachers must as well be oriented in their intention and the intended way they would integrate technology in teaching



so that these students' learning would be catered. There must be planned behavior that would also refer for the teachers' view of technology integration to be more deliberative.

Four areas of technology benefits that have not been thoroughly researched and are applicable to special education and technology has been delineated by Roblyer (2004). First is "research to establish relative advantage," that includes preventing inert knowledge (i.e., skills learned but never used) and increasing cultural awareness and acceptance (e.g., internet projects to encourage appreciation of other cultures and improve attitudes about other ways of life). Second is "research to improve implementation methods" that might include word processing and online chats and conferences. Thirdly is "research to monitor impact on important societal goals" that addresses information literacy and visual literacy skills as part of high quality education for all students. Last is "studies to monitor and report on common uses and shape directions" that address how technologies are used in practice and what impact they have on school life.

This study focused on the last need which is "studies to monitor and report on common uses and shape directions". Specifically, it caters to a) the technologies integrated in classroom instructions in teaching students with special learning needs in the context of Baguio City, b) the extent of effectiveness of the technologies integrated in teaching students with special learning needs in Baguio City, and c) the problems encountered in the use of these technologies in teaching students with special learning needs.

This study can help special educators to have a deeper understanding in the integration of technology in teaching students with special learning needs. Through this study, they will come up with easier and conducive ways to cater the needs of these students. For students, this study can provide clear

lines of information that not all technologies are for gaming, social networking and the like, but they also play a major role in supporting learners in a classroom setting.

Moreover, this study can provide future researchers with more information regarding the use of technologies in teaching students with learning disabilities. On the part of the researchers, this paper can serve as a guide on how to present their lessons in a more meaningful way. It will also make them aware of the needs and difficulties encountered by the learners and address these concerns to make their learning more enjoyable and purposeful.

### **Methodology**

This study utilized qualitative and quantitative approach. For the problems presented, descriptive approach is employed, but predominantly quantitative method is utilized. The survey questionnaire was formulated with the utmost care; hence, survey questionnaire method of formulation was considered. It was validated by the experts in the field of technology and in Special Education; then it was pre-tested at Benguet Special Education Department-Wangal, La Trinidad, Benguet who have 17 Special Education teachers. Using Kuder Richardson Formula 21 to test the reliability of the questionnaire, it was considered reliable.

The self-made questionnaire consisted of 43 named hardware technologies and 13 named software technologies that were assessed with their extent of use using a 4 point Likert scale (4=Always Used, 3= Frequently Used, 2= Sometimes Used, 1= Never Used), and their extent of effectiveness using a 4-point Likert scale (4= Always Effective, 3= Frequently Effective, 2= Sometimes Effective, 1= Never Effective). Moreover, perceived problems in the integration of technology in teaching students with special learning needs were assessed through a yes or no response. If the response is yes it is

equated to be a problem with the scale of 0.51-1.00. On the other hand, if the response is no, it is equated to be considered as a problem and is scaled to as 0.01-0.50.

### **Participants**

The respondents to this study included 53 teachers from the different schools offering special education, namely Special Education (SPED) Baguio, Bridges Learning and Tutorial Center, Easter College SPED Center, Just For Kids Tutorial Center, STI SPED Center, San Lorenzo Ruiz- deaf Resource Center, and Northern Luzon Association for the Blind. These respondents were chosen because they belong to the context of schools who offer Special Education in Baguio City.

### **Settings and Arrangement**

Guided with the letter approved by the Undergraduate Research Coordinator and the Dean of the School of Teacher Education, the researchers personally asked the Schools Division Superintendent for the Baguio City Division, Estela Leon –Cariño, Ed.D., CESO the permission to administer the survey questionnaire in the schools that offers Special Education in Baguio City. In addition, the researchers asked the permission of the school heads of the schools before the questionnaires were administered. The researchers have personally administered the said survey questionnaire to be able to discuss the purpose of the study and the way the survey questionnaire should be answered.

### **Findings and Discussion**

For the acquisition of meaningful learning experiences to develop problem solving and higher order thinking skills and to function in the world beyond the classroom, access to technology is an essential element and its appropriate and successful integration into learning environments has the potential to benefit all students (Blair, 2003). Only over 53% of the teachers do not routinely use

technology in the classroom and over half of the students responding to questionnaires reported that they use technology no more than once a week, unfortunately, this was the result in a large scale of the nationwide survey of teachers, students, and administrators (Abbott, 2003). In the report made by Rodriguez (2007), the Philippines is ranked 48th in terms of preparedness and ability to absorb advances and growth in information and communication technologies (ICT) among the 55 nations included in the Information Society Index (ISI).

Study results show that in the special education schools in Baguio City, there is integration of technology, but not to an extensive level. This is in accordance to the fact that there is a relative relationship between availability and effectiveness in the integration of technology. Ergo, the three main concepts of this study that affects and collaborates together for the successful integration of technology in teaching students with special learning needs include availability, effectiveness, and the problems encountered.

Table 1. Most available technology integrated in teaching students with special learning needs

Rank	Technology	Mean	Descriptive Indicator
1	Whiteboard	2.8490	B
2	Multimedia Software	2.5492	B
3	Dictionary	2.5094	B
4	Computer	2.4905	C
5	Clock	2.4716	C

Table 1 shows the most available technologies that are integrated in teaching students with special learning needs with the following descriptive indicator: A- Always used (3.25- 4.00); B- Frequently used (2.50- 3.24); C- Sometimes used (1.75- 2.49); D- Never used (1.00- 1.74)

With the weighted mean of 2.8490 signified to be frequently used, whiteboard resulted to be one of the most available technologies in teaching students with special learning needs in the SPED schools in Baguio City. It is approximately used three times a week for classroom interaction. With the observation in the schools, whiteboard is commonly utilized by teachers and students for writing (through the use of a whiteboard marker) and for projecting pictures, videos and texts (through the

use of either an overhead projector or an LCD projector). With its affordability, considering its type and size and with its usability for the betterment of the teaching- learning process, schools made a way to provide it. A respondent said *“I handled deaf students in my Algebra. I do not allow them to use calculators. My style of teaching makes use of whiteboard markers and whiteboard since Algebra usually involves computation in problem solving”*.

With a mean of 2.5492 interpreted as frequently used, Multimedia Software resulted to be the second most available technology in teaching students with special learning needs. Experts advised that teachers may use multimedia software to present more interactive, motivating, and relevant and plenty of action and novelty mannered lessons (Sponder & Hilgenfeld, 1994). Moreover, the electronic means of linking various media in new and different ways in activities that can facilitate fundamental learning and thinking is the educational role of multimedia (Haselbring & Glaser, 2000). To affirm, multimedia can help deepen students’ conceptual understandings by linking visual imagery and sound effects to information that is difficult to understand when presented in text alone (Hasselbring & Glaser, 2000). The aforementioned roles of multimedia software and its accessibility have furnished its result to be used recurrently in the classroom. Although, there is extensive debate about the efficacy of laptop computers in the classroom, several studies have identified benefits such as keeping students on task and engaged (Hyden, 2005), and helping students follow lectures via PowerPoint or multimedia (Lauricella & Kay, 2010).

The third most common technology with a mean of 2.5094 is dictionary. It is an essential tool for teachers and students especially when it comes to words. Dictionary is as well the most reliable source for defining words. In a study made by Man (1998) it was found out that there is a total of 66% of the students who answered they would use a dictionary very often or quite often during term

time. This tool is an exemplary tool for both students and teachers to be able to develop their sense of communication. This comes in an affordable price depending on its type, size and publication. Its affordability contributes to its accessibility and availability

The computer with the mean of 2.4905 is one of the most available technologies in teaching students with special learning needs in the SPED schools in Baguio City. The researchers observed that, in order for the students to experience manipulating the computers, a computer laboratory is taken as a set-up. Moreover, other set-up noted from Tinio (2002) “in cases where no classroom is available at all to be turned into the school’s computer room, computers are housed in the principal’s office or other administrative rooms”. The limited number of available computer units may have decided the schools to plan for a computer laboratory instead of having all classrooms equipped with computers. Moreover, Rodriguez (2007) cited that the National Teacher Survey (2005) found that only 13 percent of teachers have one computer for every two or three students, and 10 percent have one-to-one (1:1) ratio. When asked what the best ratio is for classroom teaching, a majority (54 percent) of teachers replied that 1:1 would be their preference. The survey made in 2002 by the Philippine Senate Committee on Education, Arts and Culture to the South-East Asian Ministers of Education Organization Regional Centre for Educational Innovation and Technology (SEAMEO INNOTECH), reveals that there are only about 5,217 (14.28 percent) schools who have computers in the Philippines (Rodriguez, 2007).

With the mean of 2.4716, clock is interpreted as frequently used. Scheduling of tasks is important to humans. Work, personal care, transportation, and recreation are known to be included as life skills which could be succeeded if there would be an employment of time management skill to direct the tasks under the aforementioned tasks (Green, Hughes & Ryan, 2011). In education, activities and

classes are needed to be scheduled, that is where clock enters. They may be always utilized knowing that they are hanged on walls for time reference, but in this study, the focus points out on its usage in the teaching- learning process. It is asserted that over the last few years there is decrease on the way of describing time and this is made by moving away from analogue clocks proceeding to the utilization of digital clocks which are always accurate (Cotton, 2010).

Table 2. Least available technology integrated in teaching students with special learning needs

Rank	Technology	Mean	Descriptive Indicator
56	Abacus	1.0000	D
55	Vibrating Watch	1.0556	D
53.5	Talking Calculator	1.1320	D
53.5	OCR	1.1320	D
52	Raised Line Paper	1.1538	D

Table 2 shows the least available technologies that are integrated in teaching students with special learning needs with the following descriptive indicator: A- Always used (3.25- 4.00); B- Frequently used (2.50- 3.24); C- Sometimes used (1.75- 2.49); D- Never used (1.00- 1.74).

Abacus (mean= 1.000), Vibrating watch (mean= 1.0556), talking calculator (mean= 1.1320), Optical Character Recognition (mean= 1.1320) and raised line paper (mean= 1.1538) are included in the least available technologies that are integrated in teaching students with special learning needs in the SPED schools.

Abacus, an old time's calculator, is not widely used and is less and less popular in the system of today's learning scenario. As for the vibrating watch, Green, Hughes Ryan (2011) posited that it is used as a self-regulation and time management tool for students and for people with Intellectual Disability. For the talking calculator, it is only aimed at students with visual impairment. On the part of the raised line paper, a low-tech tool for teaching line orientation is essential to students with dysgraphia or difficulty in writing and for mathematical computations if students experience difficulties aligning their work (Ministry of Education and British Columbia School Superintendent's Association, 2011).

On the other hand, Optical Character Recognition (OCR) existence had brought blind students' ability to place books or other print materials on a scanner and to have the text interpreted and read using synthetic or digital speech. However, Gold and Lowe (2009) acknowledged that it is a high-technology device that costs more than \$3, 000.

Table 3. Most effective technology integrated in teaching students with special learning needs

Rank	Technology	Mean	Descriptive Indicator
1	Whiteboard	2.7169	B
2	Computer	2.6792	B
3	Dictionary	2.5849	B
4	Clock	2.5471	B
5	Laptop	2.3962	C

Table 3 shows the most effective technologies that are integrated in teaching students with special learning needs with the following descriptive indicator: A- Always effective (3.25- 4.00); B- Frequently effective (2.50- 3.24); C- Sometimes effective (1.75- 2.49); D- Never effective (1.00- 1.74)

The study reveals that the use of whiteboard (mean= 2.7169) is frequently effective in teaching students with special learning needs. Boards had a beneficial impact in motivating and getting the attention of students with special learning needs that gears towards effective teaching-learning process (Somekh et al., 2006). Whiteboard nowadays is essential in the delivery of lessons in the educational setting. It comes in different sizes and types that make it more accessible and easy to handle. It may be permanently placed in the classrooms.

Computer's extent of effectiveness have encircled the mean of 2.6792, which is under frequently effective. In addition, the survey of the National Teachers Survey (2005) revealed that teachers rank computers as most effective for working on reading skills, writing skills, math drills and critical thinking skills. To support, Gokhale (1996) mentioned that integration of computer simulation into traditional lecture-lab activities enhances the performance of the students. Guided computer simulation activities can be used as an educational alternative to help motivate students into self-discovery and develop their reasoning skills. Moreover, many studies (Christmann, Badget &



Lucking, 1997; Dwyer, 1994; Kulik & Kulik, 1991; Liao, 1992; Losak & MacFarland, 1994; Sivin-Kachala & Bialo, 1996) have shown that computers at school can have a beneficial effect not only on student achievement but also on students' learning motivation, on classroom atmosphere, and on the teachers' willingness to experiment with new and innovative instructional approaches (Schaumburg, 2001).

This study also reveals that dictionary (2.5849) is frequently effective. This revolves to the notion that its impact on the betterment of the teaching-learning process is great. Boonmoh (2003) claimed that dictionaries are beneficial and facilitative in the teaching and learning context. Moreover, its effectiveness involves skills and strategies that students acquire not only about dictionaries but also about language (Man, 1998). In a study conducted by Dziemianko (2010) as cited by AlBulushy (2012), to determine students' actual use, the students consulting the electronic dictionary performed much better than those using the paper dictionary. Those who support the use of the dictionary presume that it is more useful with receptive and productive tasks. They also argue that it is a better learning tool since its use affects students' withholding of meaning and gives higher chances for more effective recovery of learned words. More recent studies (Chan, 2011, 2012; Frankenberg-Garcia, 2011; Laufer, 2011) have proposed improving learners' language awareness as part of dictionary-skills training.

Clock's extent of effectiveness reaching the mean of 2.5471 is specified to be frequently effective. This technology is observed to be effective in the way the tasks of the students are assessed. Schedule and duration in an activity where the students work are the areas that the teachers as respondents consider.

Laptop, having been effective in its integration to classroom activities with the result as a basis earning 2.3962, is concluded to be sometimes effective. Noted that, in the report made by Demb, Erickson and Hawkins-Wilding (2004) mentioned by Lauricella and Kay (2010) 16% of overall laptop use involved typing papers. On the other hand, Arend (2004) noticed that laptops are being used in bulk for writing papers, using software programs, searching the Internet, and completing group projects.

Table 4. Least effective technology integrated in teaching students with special learning needs

Rank	Technology	Mean	Descriptive Indicator
52	Vibrating Watch	1.2264	D
53	Dual Time Watch	1.2641	D
54.5	OCR	1.3018	D
54.5	Talking Calculator	1.3018	D
56	Smart Board	1.3996	D

Table 4 shows the least effective technologies that are integrated in teaching students with special learning needs with the following descriptive indicator: A- Always effective (3.25- 4.00); B- Frequently effective (2.50- 3.24); C- Sometimes effective (1.75- 2.49); D- Never effective (1.00- 1.74)

Included in the technologies assessed to be never effective are vibrating watch (mean= 1.2264), dual time watch (mean=1.2641), optical character recognition and talking calculator mean which have the same mean at 1.3018, and smart board (mean= 1.3996). The vibrating watch and dual time watch are utilized for time. A clock may have been used to surrogate their function in the classroom instruction. To have a clear view, it is asserted that over the last few years there is decrease on the way of describing time and this is made by moving away from analogue clocks proceeding to the utilization of digital clocks which are always accurate (Cotton, 2010).

Optical Character Recognition, talking calculator and Smart Board are signified to be never effective. From the allowable time, the researchers have not really come across Smart Board and Optical Recognition Character in the schools that served as respondents. This may have been due to the fact that the schools could not provide it for they are of high value. For example, the SMART board costs

\$5000, depending on size and features for its installation only, not considering the material itself (Preston & Mowbray, 2008). Moreover, because of its non-provision, teachers have not come across it yet- thus concluding for these technologies to be not effective in their presumption.

Table 5. Most common problem in integrating technology teaching students with special learning needs

Rank	Statement	Mean	Descriptive Indicator
1	The school does not provide the existence of new technologies due to its cost.	0.5577	P
2	My students have no sufficient hardware and software skills that make instructional time being consumed by technical issues rather than the content of the lesson.	0.5192	P
3	There are limited available technologies to be used in my classroom.	0.5	p

Table 5 shows the problems encountered in the integration of technology in teaching students with special learning needs with the following descriptive indicator: NP- not a problem (0.01- 0.50) and P- problem (0.51- 1.00)

Hasselbring and Glaser (2000) mentioned that one of the serious considerations for all schools is the cost of the technology needed to help students with disabilities participate in regular classroom settings, especially the computer systems needed for students with more severe disabilities. Moreover, it was cited that funding for technology can be obtained from a variety of sources, but these sources are not always adequate. For example, two federal acts attempt to address the needs of students with disabilities, but their goals exceed their funding levels.

However, because of limited funding, school districts are not obligated to purchase a specific computer technology, even if it is identified as potentially beneficial. Individual schools are often hesitant to provide the necessary technology because they must fund these purchases themselves rather than rely on the school district's resources (Hasselbring & Glaser, 2000). Tremendously, cost of technologies varies from upwards of \$3, 000 for certain high- tech devices and as little as a few dollars for low- tech devices as it was confirmed from Gold and Lowe (2009). It is accepted as well that "many AT electronic devices are expensive, hard to use and hard to keep track " (Green, Hughes & Ryan, 2011).

*“My students have no sufficient hardware and software skills that make instructional time being consumed by technical issues rather than the content of the lesson”*, garnered a mean of 0.5192. The result indicates technological knowledge to be a problem in technology integration. Hence, technological knowledge must be modeled and emphasized (Ludlow, 2001; Martin, 2004; Martin & Crawford, 2004; Martin & Crawford, 2005). Students are perceived to acquire basic skills regarding technology manipulation by the end of their fourth year according to the school’s goals (Tinio, 2002). The basic skills targeted include operating a computer and writing documents with a word processor, calculating with spreadsheets or writing simple programs. It is remarkable that with this set-up, students are still on their way to suffice their skills in handling the technologies available. However, Wartella, Schomburg, Lauricella and Robb, Flynn’s study (2010) suggested that technology must be introduced to children before the age of 3. Furthermore, operational skills, functional skills, strategic skills, and social skills are important skills in successfully incorporate technology (Green, Hughes, & Ryan, 2011; Behnke & Bowser, 2010).

Having a mean of 0.5, teachers employed in the special education schools noted that there are limited available technologies to be used in their classrooms. In surveys conducted, some schools reported that principals decided that all the computers that were received from the Department of Education will be placed in their office as an interim measure while waiting for a secured computer room. Computers are made available to students’ use although clearly, the set up is not ideal and may limit access (Tinio, 2002). Reiterating the experiences of most schools, technologies with limited numbers are handled by the principals or the heads and are reserved by the teachers if ever they are needed. This denotes that there are no permanently situated technologies in the classrooms. Another thing considered is the security of the technologies, where some classrooms in the schools do not really have security tools (e.g., security locks).

Table 6. Least common problem in integrating technology teaching students with special learning needs

Rank	Statement	Mean	Descriptive Indicator
12.5	I don't have sufficient knowledge in manipulating technology in my classroom.	0.0769	NP
12.5	The technology does not improve my creativity.	0.0769	NP

Table 6 shows the statements assessed as not included as problems encountered in the integration of technology in teaching students with special learning needs with the following descriptive indicator: NP- not a problem (0.01- 0.50) and P- problem (0.51- 1.00)

Sufficient knowledge in manipulating the available technologies in the classroom (mean= 0.0769) have been noted to be one of the least common problems in the integration of technologies in teaching students with learning needs in the SPED schools in Baguio. Bauer and Kenton (2005) found that teachers, who were highly educated and skilled with technology, were innovative and adept at overcoming obstacles (Almekhlafi & Almeqdadi, 2010). Gulbahar (2007) as cited by Almekhlafi and Almeqdadi (2010) stated that teachers and administrative staff felt themselves competent in using ICT available at the school. Moreover, the survey result that newer educators were less likely to believe their training to use technology in several areas was adequate, but they were still more likely to be satisfied with their overall knowledge and ability to use technology. This is in contrast to what is practiced wherein computer training for further skills enhancement is only duly implemented in the high school level- specifically in the area of Technology and Home Economics (THE) (Rodriguez, 2007).

Technology not improving the teacher's creativity (.0769) is also one of the least common problems. In reference to creativity, knowledge on manipulating technology may have brought the teachers and respondents to discover the unlimited capabilities of technologies that could allow them to express their creativity. In addition, it is known that as teachers integrate technology they could come across an evolutionary process (Sandholtz & Ringstaff, 1997; Dwyer, 1999) which includes entry, adoption, adaptation, appropriation, and invention (Kotrlik & Redmann, 2005). Anent this, assurance that

through the extraordinary storage and delivery capabilities of computers and advancements in software and communications technologies today by the educators, it is possible to present learning information in new meaningful ways, engage various senses, record and assess learner's choices and performance, and suggest remedial feedback based on the learner's performance (Akour, 2006).

The study shows that there are available technologies integrated in teaching students with special learning needs but to a limited level only. Much of these technologies are provided by school themselves. Some technologies available in the schools that served as respondents depend on the students that they cater. The generally used technology-computers, dictionaries, clocks, whiteboards, etc- could be observed in the schools. On the other hand, technology utilization, when teaching students with special learning needs is effective. This is because it helps not only the teachers to deliver well the learning, but also the students to be able to effectively grasp the learning. Thus, teaching-learning process is undertaken more effectively with the use of technology. Results show that there are problems encountered when integrating technology in teaching students with special learning needs. Some of which have been noted to be on the side of the teachers, some problems could be observed because of the students and some were from the technologies themselves. Observantly, these have affected the flow of the teaching-learning process.

### **Conclusion**

In this study, the respondents included 53 teachers from the different schools offering special education in Baguio City. They answered to a self-made questionnaire consisting of 43 named hardware technologies and 13 named software technologies. Whiteboard resulted to be one of the most available technologies in teaching students with special learning needs, followed by Multimedia Software and electronic dictionary.

With the data collected from the teachers themselves, technology integration appears to be an effective method in teaching students with special needs, whether this technology may be in software or in hardware form. Various factors, including time, knowledge in manipulation, financial resources, and the availability of this technology has affected teaching efficiency and student learning. Anent these factors, the administration, teachers and the students are considered to be the main proponents in the integration of technology for teaching-learning process to take place effectively.

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