



STUDENTS' TRANSFERABLE SKILLS COMPARISON BASED ON SPECIAL NEEDS, AGE, AND GRADE LEVEL

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Abstract: Students with special needs deserve equal opportunities in terms of careers and jobs. Therefore, they need to prepare well, including having a skill called transferable skill. Transferable skills are considered an essential factor in achieving a career. Transferable skills are life skills that are the basis and need to face a future career. This study describes the transferable skills of students with special needs in terms of the type of special needs, age, and grade level. The study employed a quantitative approach with a survey method. This study was conducted at Special Education Schools (Public and Private) in Lhokseumawe City, Aceh Province. Respondents of the study were students of classes X and XI. Transferable skills are measured using a scale developed with three aspects: cognitive, affective, and psychomotor—a test of the validity and reliability of the instrument was also carried out. Descriptive statistics and Kruskal-Wallis Test analyzed data. The results of descriptive and comparative data analysis are presented in the findings section of the study. The Kruskal-Wallis test showed a significant difference in the average transferable skill score based on the type of special needs and grade level. At the same time, the age factor did not provide a significant difference. The results of this study have implications for the design of transferable skills development programs for students with special needs to enter the workplace or the social environment after graduating from Special Education School. Future research is expected to examine a broader range of respondents covering all categories of special needs, not only students with hearing impairment, intellectual disability, and autistic, as in this study.

Keywords: Transferable Skill, Student with Special Needs, Special Education

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INTRODUCTION

Changes that occur in the world have an impact on all aspects of life, including education and the workplace. Children and adolescents will face various challenges and opportunities in the era of the industrial revolution 4.0 and towards the era of society 5.0. The younger generation, in this case, students are required to be able to adapt to these changes, including new technology, changes in the workplace, migration, conflict, as well as environmental and political changes. Furthermore, post-pandemic conditions (covid-19) are also part of the industrial revolution 4.0. Therefore, students must adapt well to all the post-pandemic changes (Dawson & Golijani-Moghaddam, 2020).

To succeed in today's and future environments, all learners need access to quality education and learning that develops skills, knowledge, attitudes, and values and enables them to become successful life-long learners, able to find and keep productive jobs, make wise decisions, and be positively involved in the community (Unicef, 2019).

Researchers, educators, and entrepreneurs agree that these transferable skills are fundamental (Warren, 2021). In the industrial world, more employers are looking for candidates who possess transferable skills, in addition to the technical and educational requirements (Collins-Nelsen et al., 2021). This indicates that success in a career requires transferable skills within the individual. According to a survey conducted by the United States Department of Labor (Mynatt & Gibbons, 2011), the personal qualities that most employers desire are responsibility, self-respect, self-management, sociability, and integrity. Each of these unique qualities is called a transferable skill.

Similarly, what was formulated by Unicef (2019) is that students need a set of skills that can connect various skills, such as basic skills, digital skills, and job-specific skills, to be successful in education, work, and life. Transferable skills are the key that connects the three previously mentioned skills, as shown in Figure 1.

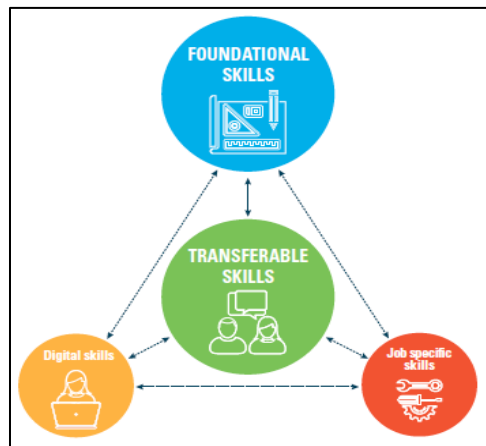


Figure 1. Transferable Skill Relationship with Three Other Skills
(Source: Unicef, 2019)

Transferable skills are skills acquired in one situation that can be applied to new circumstances and as a basis for career development (Yena, 2020). Transferable skills, also known as life skills, 21st-century skills, soft skills, or socio-emotional skills, enable young people to become agile, adaptive learners and citizens ready to face personal, academic, social, and economic challenges (Unicef, 2019). From the two definitions mentioned, transferable skills are life skills that are the basis needed to face future careers.

The main theory of transferable skills is a constructivism learning theory which identifies that effective learning will last a long time if the knowledge and skills are transferred in different contexts (Pritchard & Woollard, 2004). The constructivist view identifies that building knowledge requires more than just knowing facts. Transferable learning skills can help form, present, and develop understanding more effectively (Manning, 2019).

Research on transferable skills is also often associated with employability or work skills. For example, study Andrews & Higson (2008) examine the employer's expectations of employability and transferable skills that graduates of European universities possess. There is also a study about the gap between competence and work skills possessed by university graduates in Malaysia (Kenayathulla et al., 2019). In Indonesia, several transferable skill studies have been conducted on undergraduate students and lecturers (Setiawan et al., 2018), vocational teachers (Kurnia et al., 2014; Marsono et al., 2017), dan managers (Setyorini et al., 2022). However, no research has examined transferable skills in high school students with special needs.

Past researchers invite future research to utilize the conceptualization of transferable skills as a point of departure for (1) investigation of how and when concepts are applied and for (2) empirical research on how to develop and assess students' transferable skills, as well as opportunities to adapt to future changes - in higher education and the workplace (Olesen et al., 2020).

This study examined the transferable skills of students with special needs. As previously mentioned, to achieve the competencies required by a particular job, students with special needs need to prepare themselves well, including having transferable skills. Thus, transferable skills are considered an essential factor in the career path of students, including students with special needs. Given the importance of preparing students with special needs to face future careers and the workplace, it is necessary to conduct an analytical study of transferable skills in students with special needs to reveal the comparison of transferable skills possessed by students based on the type of special needs, age, and grade level (X and XI) at the Special School in Lhokseumawe City, Aceh Province.

METHOD

The study employed a quantitative approach. The study respondents were 30 students with special needs in grades X and XI at Special Education Schools (Public and Private) in Lhokseumawe City, Aceh Province. This study used total sampling. Data were collected using the Transferable Skills scale, which referred to three aspects of skills: cognitive, affective, and psychomotor. The transferable skill scale was developed based on the transferable skill construct proposed by Pellegrino & Hilton (2013), Chami (2020), dan Unicef (2019, 2022). Preparing a transferable skill scale uses sentences that are easy to understand for students with special needs.

Validity and reliability tests were carried out on the study instrument. The validity test results obtained 48 valid items from 60 items. Each indicator was still represented by a minimum of 3 items based on the validity test results. The reliability test resulted in Cronbach's Alpha of 0.931, which meant that the instrument was reliable and feasible to be used in the study. The filling of instruments by students with special needs is carried out with the help of the teacher and the provision of additional explanations by the researcher. For students with hearing impairment, further explanations are given by the teacher with sign language.

Data were analyzed using descriptive analysis with categorization based on hypothetical data/ideal scores from the instrument. Transferable skills were categorized into five levels: highly skilled, skilled, somewhat skilled, little skilled, and not skilled. The non-parametric analysis to examine the difference in transferable skills was analyzed based on three factors, namely the type of special needs, age, and grade level.

The Kruskal-Wallis Test analysis with a significance level of 5% was used to test the null hypothesis, namely (1) the average transferable skill score did not differ significantly based on the type of special need, (2) the average transferable skill score did not differ significantly based on age, and (3) the average transferable skill score was not significantly different in the group of students with special needs in grades X and XI.

FINDINGS AND DISCUSSIONS

A. Findings

1. Demographics of Respondents

The study involved 30 students with special needs in grades X and XI, in the age range of 16-20 years. It consisted of three types of special needs (hearing impairment, intellectual disability, and autistic) from Special School in Lhokseumawe City, Aceh Province. The average age of the respondents was 17.7 years. In total, the demographics of the research respondents are shown in table 1.

Table 1 Demographics of Respondents

No	Demographic Aspects	Frequency	Percentage
1	Types of Special Needs		
	- Hearing Impairment	8	26.67
	- Intellectual Disability	19	63.33
	- Autistic	3	10.00
2	Age		
	- 16 years old	9	30.00
	- 17 years old	5	16.67
	- 18 years old	4	13.33
	- 19 years old	8	26.67
	- 20 years old	4	13.33
3	Grade Level		
	- X	13	43.33
	- XI	17	56.67

2. Results of Transferable Skills Descriptive Analysis on Students with Special Needs

The results of the descriptive analysis showed that the average transferable skill possessed by students with special needs was 133.26 (SD=22.86; N=30), included in the somewhat skilled category based on the ideal transferable skill score (hypothetical mean and standard deviation). In addition, the average transferable skill score in cognitive (Mean=30.06; SD=5.65), affective (Mean=20.40; SD=4.73), and psychomotor (Mean=82.80; SD=15.32) categories are also included in the somewhat skilled category.

Table 2 The Results of Descriptive Analysis of Transferable Skills Variable and Its Aspects

Variable and Aspects	N	Mean	Std. Deviation	Min		Max	
				Hipotetic	Empiric	Hipotetic	Empiric
<i>Transferable Skill</i>	30	133.26	22.86	48	94	240	192
Cognitive Aspect	30	30.06	5.65	11	18	55	42
Affective Aspect	30	20.40	4.73	7	12	35	29
Psychomotoric Aspect	30	82.80	15.32	30	64	150	121

Descriptive analysis was also carried out on the type of special needs, age, and grade level. The results of the descriptive analysis on the factors of the kind of special needs possessed showed that there was a difference in the average transferable skill score for students with special needs, where the average score of hearing impaired students was 144.87 (SD = 29.91; N = 8), intellectual disability was 125.94 (SD=18.15; N=19), and autism was 148.66 (SD=8.73; N=3). On the age factor, descriptively, there was also a difference in the average transferable skill scores of students with special needs.

Descriptively, the class factor also showed a fairly large difference in the average transferable skill scores, namely 125.07 (SD = 23.28; N = 13) for class X students, and 139.52 (SD = 21.08; N = 17) for class XI students. This difference is analyzed statistically and discussed in point C. The results of the descriptive analysis of the factors in students are shown in table 3.

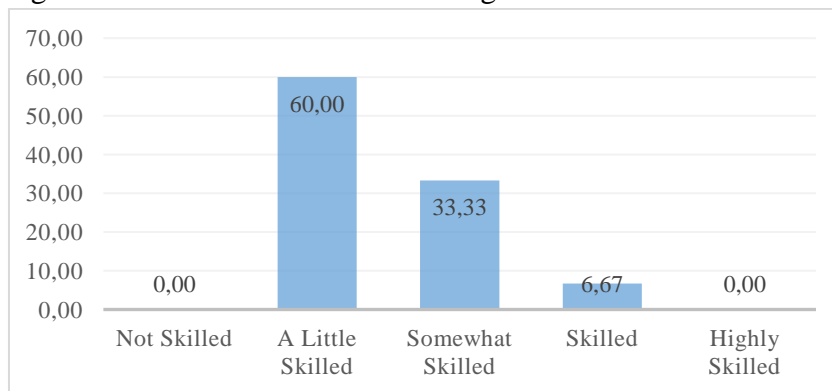
Table 3 Results of Descriptive Analysis of Transferable Skills Based on Types of Special Needs, Age, and Grade Level (N=30)

Factors	N	Mean	Std. Deviation
Types of Special Needs			
- Hearing Impairment	8	144.87	29.91
- Intellectual Disability	19	125.94	18.15
- Autistic	3	148.66	8.73
Age			
- 16 years old	9	122.11	16.73
- 17 years old	5	142.00	30.87

Comparison Students' Transferable Skills Based on Special Need, Age, and Grade Level

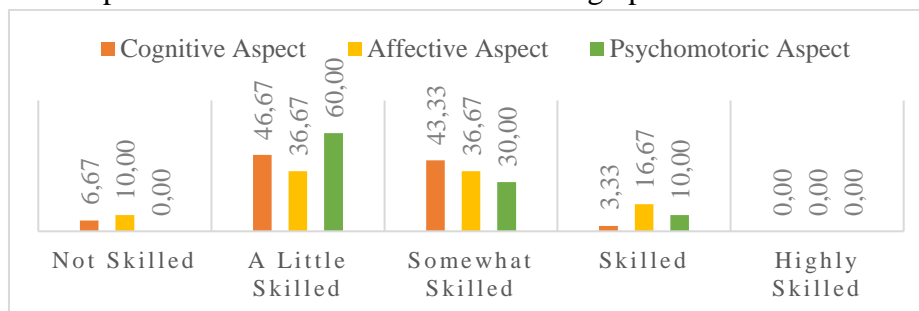
- 18 years old	4	142.50	27.67
- 19 years old	8	131.00	15.83
- 20 years old	4	142.75	30.57
Grade Level			
- X	13	125.07	23.28
- XI	17	139.52	21.08

Based on the ideal transferable skill score categorization, 60.00% of students with special needs are in a little skilled category, 33.33% of the students are in the somewhat skilled category, and the remaining 6.67% are in the skilled category. The data analysis results also show that no students have transferable skills in the highly skilled and not skilled categories. Graph 1 shows the percentage of transferable skills in five categories.



Graph 1 Percentage of Transferable Skills of Students with Special Needs (N=30)

If analyzed based on the transferable skill aspect, there are still 10.0% of students with special needs who are not skilled in the affective aspect and 6.67% in the cognitive aspect. The highest percentages in each aspect are also in a little skilled and somewhat skilled categories. The complete categorization for each aspect of transferable skills is shown in graph 2.



Graph 2 Percentage of Transferable Skills of Students with Special Needs by Aspects (N=30)

3. Transferable Skills Comparative Analysis Results Based on Type of Special Needs, Age, and Grade Level

Comparative analysis showed that the average transferable skill scores differed significantly between the hearing impairment, intellectual disability, and autistic groups at the 95% significance level. The same difference also occurred in students in grades X and XI groups. Thus, the null hypothesis (H_{01} and H_{03}) is rejected. Meanwhile, the age difference did not provide a significant difference in the average transferable skill score of the respondents in this study, so the second null hypothesis (H_{02}) could not be rejected. In other words, the age difference has no effect on the transferable skills possessed by the study respondents. The results of the Kruskal-Wallis test for each factor are shown in table 4.

Table 4 Kruskal-Wallis Test Results for Each Factor of Transferable Skills

Factors	N	Mean Rank	Kruskal-Wallis Test Results	
Types of Special Needs				
- Hearing Impairment	8	19.19	Kruskal-Wallis H	6.127
- Intellectual Disability	19	12.63	df	2
- Autistic	3	23.83	Asymp. Sig.	0.047*
Age				
- 16 years old	9	11.39		
- 17 years old	5	18.20	Kruskal-Wallis H	3.178
- 18 years old	4	17.75	df	4
- 19 years old	8	15.81	Asymp. Sig.	0.528
- 20 years old	4	18.50		
Grade Level			Kruskal-Wallis H	5.122
- X	13	11.35	df	1
- XI	17	18.68	Asymp. Sig.	0.024*

*) Significant at 95%

The Kruskal-Wallis test on the type of special needs factor and grade level was carried out further for each aspect of transferable skills. Comparative analysis of transferable skills' cognitive, affective, and psychomotor aspects shows that the average transferable skill score does not differ significantly between the hearing impairment, intellectual disability, and autistic groups. However, on the grade level factor, there appears to be a significant difference between class X and class XI in cognitive aspects. In contrast, the other two aspects are not significantly different. The results of the Kruskal-Wallis test on the transferable skill aspect for the type of special needs factor and grade level are shown in table 5.

Table 5 Kruskal-Wallis Test Results for Each Aspect of Transferable Skills

Faktor	N	Cognitive Aspect			Affective Aspect			Psychomotoric Aspect		
		Mean Rank	Statistical Result	Mean Rank	Statistical Result	Mean Rank	Statistical Result			
Types of Special Needs			Kruskal-Wallis H	5.239	16.94	Kruskal-Wallis H	5.138	18.88	Kruskal-Wallis H	4.900
- Hearing Impairment	8	19.19	df	2	13.34	df	2	12.92	df	2
- Intellectual Disability	19	12.82	Sig.	0.073	25.33	Sig.	0.077	22.83	Sig.	0.086
- Autistic	3	22.67								
Grade Level			Kruskal-Wallis H	4.627		Kruskal-Wallis H	1.060		Kruskal-Wallis H	3.715
- X	13	11.58	df	1	13.62	df	1	11.35	df	1
- XI	17	18.50	Sig.	0.031*	16.94	Sig.	0.303	18.68	Sig.	0.054

*) Significant at 95%

B. Discussions

Skills describe specific abilities developed directly in real-life situations or through education and training and then transferred to real-life situations. Transferable skills can be used to act efficiently in different real-life situations, which can be technical and non-technical (Nägele & Stalder, 2017). Transferable skill as a psychological attribute can be measured using non-test instruments on a scale (Alpay & Walsh, 2008; Collins-Nelsen et al., 2021) or a questionnaire with open questions (Collins-Nelsen et al., 2021). The development of transferable skill instruments is closely related to the leading theory used by researchers. For example, in their research, Alpay & Walsh (2008) used a five-point scale to assess students' perceptions of their transferable skills, with a scale of 1 representing very low confidence and 5 very high confidence. In this study, transferable skills were measured by student responses to 48 statement items on a scale of 1-5, where 1 was for unskilled, and 5 was for highly skilled.

Data analysis shows that the transferable skills of students with special needs are included in the category of somewhat skilled. Where the somewhat skilled category is an intermediate condition that leads to high proficiency in some indicators and low ability in other indicators. Definitely, this is in accordance with the characteristics of students with different special needs, with their advantages and disadvantages.

The comparison test results show that the differences in the type of special needs of students significantly influence their transferable skills. The study results show that students with intellectual disability have lower transferable skills than those who are hearing impaired and autistic. In this case, students with intellectual disability tend to have cognitive problems that affect

their affective and psychomotor aspects. Cognitive function and learning characteristics of intellectual disability are slow learning, weak memory, lack of concentration, difficulty maintaining, and generalizing what has been learned (Heward et al., 2020). Following these characteristics, students with intellectual disability tend to be weak in their transferable skills.

Weak transferable skills in students with intellectual disability have implications for preparing these students to enter the workplace. The school prepares students with intellectual disability for work by providing opportunities for them to gain experience in the workplace (Hallahan et al., 2014). To teach new skills to students with intellectual disability, several approaches that are often used are cooperative learning, task analysis, and scaffolding (Gargiulo, 2012). With the development of innovative transition programs, many individuals with intellectual disability are achieving levels of independence in community life and work that were never thought of before. Much of this success requires the collaboration of parents, students, and many professionals.

In contrast to this study, previous research examined differences in student skills regarding parenting styles in the family (Rahman & Ningrum, 2022). Another study examines the skills needed by Indonesia's young generation in the future (Nambiar et al., 2019) and found that parents of children with special needs play an essential role in making choices about the skills given to children and the type of institution where students with special needs acquire these skills.

The study's results also showed that the average transferable skill score of autistic students was higher than that of hearing-impaired students. However, it should be understood that the number of respondents in this study for each type of special needs is not the same from one category to another, so the results of this study cannot be generalized to all autistic and hearing impaired populations. The difference may occur because the number of autistic students respondents is less than the hearing impaired students.

The age difference of the respondents is not a factor that has a significant effect on the average transferable skill score. This happens because students with intellectual disability tend to be older than hearing impaired and autistic students. In contrast, transferable skills in students with intellectual disability are lower than students with hearing impairment and autistic. As stated in theory, students with intellectual disability have intellectual problems with an IQ classification of 50-70, so their learning abilities are lower than other

students of their age (Hallahan et al., 2014). Other studies have shown no significant differences in the average score of transferable skill awareness between male and female respondents (Baser et al., 2017).

The grade level factor is a significant differentiator for students with special needs average transferable skill scores. Educational experience contributes to developing transferable skills so that class XI students get a higher average transferable skill score than class X students. Several researchers mentioned that specific educational programs could improve students' transferable skills (Collins-Nelsen et al., 2021; Ng & Harrison, 2020; Stollhans, 2016; Yeadon-Lee & Hall, 2013).

This research has implications for the design of education and guidance programs for developing transferable skills for students with special needs. To create a good program design, there are several considerations in identifying which transferable skills will be developed in a particular context, namely (1) understanding the conceptualization of transferable skills clearly and relevant to the context; (2) identifying a set of transferable skills, relevant to the context, which together contributes to the learning dimension; (3) identify a smaller set of core transferable skills that include a balance of cognitive, social, and emotional skills; and (4) identify other skills related to transferable core skills (Unicef, 2021). This step requires a more in-depth analysis of each core skill in transferable skills.

This study is limited to students with special needs in Lhokseumawe City only, in small numbers, so the results cannot be generalized to other students with special needs. In addition, the number of students with special needs for each category is not the same, and not all special needs categories participate in this study. Therefore, it is necessary to use a proportional sampling technique to obtain results that can be generalized to a larger population. The small amount of data and the disproportionateness of the sample made this study unable to use parametric statistics.

CONCLUSION AND RECOMMENDATION

Based on the findings of this study, it can be concluded that the transferable skills of students with special needs differ from one another based on the type of special needs they have and their grade level. However, the age factor did not have a significant effect on the transferable skills of students with special needs because students with intellectual disability tend to be older than students with hearing impairment and autistic, while *transferable skills* in intellectual

disability students are lower than hearing impairment and autistic students. In addition, a study for the transferable skill aspect found that only the cognitive aspects were different between the groups of students with special needs from class X and class XI, while in other aspects of the type of special needs factor, age, and grade level, no significant differences were found.

The results of this study can be used by the school counselor in special education schools as an initial consideration in designing educational programs and career guidance to develop transferable skills in students with special needs. In addition, teachers in special education schools also play a significant role in developing the transferable skills of students with special needs. This can be done by integrating transferable skills in each subject taught. Future research is expected to examine a broader range of respondents covering all categories of special needs, not only students with hearing impairment, intellectual disability, and autistic, as in this study. In addition, the use of parametric statistics will provide more meaningful results.

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