

Latent factors of effective Knowledge Transfer tool requirements for Special Educational Needs in Mauritius

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SEN students often struggle with impairments which hinder their learning abilities and depth of understanding. Hence, Knowledge Transfer (KT) tools are vital instruments that can facilitate knowledge transfer to them. Nonetheless, what makes a KT tool effective and efficient in transferring knowledge to SEN students is still unclear having very limited investigations. To unearth the latent factors of an effective and efficient KT tool requirements for SEN in Mauritius, this study tried to explore the factors underpinning the requirements of effective and efficient KT tool and determine the most important quality needed. A close ended questionnaire was administered to 55 OTs which was further analyzed using IBM SPSS Statistics 26 and Microsoft Excel 2019. Tests like exploratory factor analysis, Barlett's sphericity, Kaiser-Meyer-Olkin (KMO) measure and scree plot were generated. Eventually, the Ability to Enhance Critical Thinking Skills was ranked as the top quality of an effective and efficient knowledge transfer tool.

Keywords: special educational need, knowledge transfer tools, occupational therapy

INTRODUCTION

The concept of inclusion is internationally viewed as reform acknowledging diversity amongst all students (Ainscow and Messiou, 2017). More attention is now being paid to promoting equity and inclusion in educational institutions influenced by the 2030 Sustainable Development Goal (SDG4). The SDG 4 highlights that inclusive and equitable quality education should be accessible to all learners to promote lifelong learning opportunities (Ainscow, 2020). However, there is still a small segment of the population who are still being marginalized and deprived of equitable and inclusive education (McLinden *et al.*, 2022) and these are the learners with disabilities. The progress that has been achieved is said to be inadequate to meet up the requirements of the SDG 4 and one clear example is the discrepancies these students face to access education (Otieno *et al.*, 2023). As per the UNESCO (2011), a SEN child has more difficulties than other children of their same age to get access to learning; hence, they need supplementary assistance and support to compensate for these difficulties.

To facilitate the learning process of SEN students, knowledge transfer tools can be used. Since knowledge transfer is a process where knowledge flows from one individual to another through a/ some channels (Abou Hashish, 2017), knowledge transfer tool can aid in improving the knowledge transfer process by maximizing the knowledge transfer and limiting loss of knowledge during the process. The

knowledge transfer process englobes the transfer of learning from the SEN stakeholders to the SEN student which relates to improving SEN cognitive abilities to enhance learning. In essence, the main educational stakeholder expert in enhancing cognitive abilities to address the complex developmental needs of SEN students is an Occupational Therapist (OT). OTs are unique member of the educational team (Queensland Department of Education, 2023) who boost up children's occupational performance and promote collaboration between educators to develop strategies for the classroom (Echsel *et al.*, 2019; Kramer-Roy *et al.*, 2020, Arendse and Hess-April, 2023). They use professional and clinical reasoning, best available evidence, and therapeutic use of self to select and implement the most appropriate types of interventions, including occupations, activities (AOTA, 2020c) and different tools with SEN. OTs use knowledge transfer tools to increase SEN participation and enhance their academic performance. Nevertheless, not much has been investigated on the required features for a KT tool to be effective and efficient with a SEN student. In response to this observation, this study aimed at exploring the latent factors of effective and efficient KT tool requirements for SEN in Mauritius based on the following research questions:

1. What are the factors underpinning the requirements of effective and efficient KT tool?
2. What is the most important feature required to term a KT tool as effective and efficient?

LITERATURE REVIEW

Special Educational Needs

As per RAND (2013), no commonly agreed definition of SEN globally exists. The majority of the definitions include a wide range of impairments namely cognitive, physical and mental difficulties (European Agency for Special Needs and Inclusive Education, 2013). Bryant *et al.*, (2019) termed SEN as individuals having developmental, learning, physical, behavioural and emotional limitations while Radulski (2022) revealed that some of them have visible differences like physical impairments known as the visible disabilities as for others, the differences are less visible such as autism spectrum disorder and are known as the 'invisible' or 'hidden' disabilities. SEN students face challenges like limited friendships, low peer acceptance, and lower socialization compared to their friends, making it more complicated for them to integrate in social and academic activities (Schwab *et al.*, 2021). Hence, apprehending the struggles SEN students face is fundamental in order to be able to address their developmental needs (Wang *et al.*, 2018; Cojanu and Visan, 2017) as these can significantly impact on their social and physical development (Ion-Ene *et al.*, 2014; Badau *et al.*, 2023; Jeng *et al.*, 2017; Marin *et al.*, 2023). The diverse learning profiles of SEN students require tailor made intervention strategies to improve their motor-cognitive abilities (Ion-Ene *et al.*, 2014; Badau *et al.*, 2023; Jeng *et al.*, 2017; Marin *et al.*, 2023) and meet their specific needs (Real, 2022). However, despite several international efforts for an inclusive agenda, SEN students are still lagging behind in education (Filmer, 2008; Rangvid, 2022).

Knowledge Transfer and Knowledge Transfer Tools

Knowledge Transfer (KT) is defined by Singley and Anderson (1989) as how knowledge is acquired in one situation and is applied (or is failed to apply) to another. It can be described as the process where knowledge flows from one individual to another through a/ some channels (Abou Hashish, 2017). KT is considered a subprocess of organizational learning (Argote *et al.*, 2003, 2021), which includes learning from a focal unit's own direct experience or indirectly from the experience of other units (Levitt and March, 1988). This review emphasizes KT from the OT to the SEN student to improve his/her academic performance. KT does not, however, happen automatically. Different form of KT can be manifested in different ways and with different techniques (Lehner, 2021). Previous research found that no single tool or implementation strategy is effective in all contexts or with all populations, which makes it important to have a situational evaluation of KT processes concerned (Siron *et al.*, 2015). A substantial gap between research and evidence production and use has been observed when it concerned transfer of research evidence into practice (Dagenais *et al.*, 2015). Knowledge Transfer tools are instrument used to facilitate the process of KT. Studies on KT tools explain that KT tools promotes the exchange of knowledge (Mazorodze and Buckley, 2020). However, the most critical features of the KT tools to allow exchange of

knowledge is still unclear. This study focused on the transfer of knowledge from OTs to SEN students. Since, SEN students have a diverse range of difficulties impacting on their overall wellbeing, it is imperative to facilitate their learning process by understanding the requirements needed for an efficient and effective KT tool for a productive knowledge transfer.

Knowledge Transfer Tool Requirement with SEN Students

With reference to the discussions above, SEN students comprise a range of difficulties with varying severity, which require the need to devise means and ways to facilitate their learning process. KT tools are powerful instruments in facilitating knowledge transfer from professionals to SEN students. Nevertheless, the KT tools should be equipped with features which can ease this flow of knowledge from the sender to the recipient, and in this paper, these are the OT and SEN student. Some important features identified are outlined below.

Ability to Improve Learning

SEN students face many challenges which impact their learning. Some of the struggles are social interactions, emotional regulations, communication which directly impact on their learning and overall wellbeing (Ionescu *et al.*, 2021 and Maor *et al.*, 2016). These difficulties significantly affect their social and physical development and require tailor made interventions to be able to improve their motor–cognitive abilities (Ion-Ene *et al.*, 2014; Badau *et al.*, 2023; Jeng *et al.*, 2017; Marin *et al.*, 2023) and eventually improve their learning. Therefore, it has become very important to understand these challenges SEN students face to address their complicated developmental needs (Wang *et al.*, 2018 and Cojanu and Visan, 2017). KT tool is an instrument which can aid in addressing these challenges. Through effective knowledge transfer, KT tools can improve learning in SEN students.

Ability to Improve Decision Making

The decision making process depends largely on the cognitive skills of the SEN students. Cognitive skills relate to reasoning that determine many fundamental life outcomes (Deary *et al.*, 2007; Strenze, 2007; Gnambs, 2017). SEN students usually exhibit substantially lower cognitive abilities than regular students of their age (Müller *et al.*, 2013), whilst they struggle much with their working memory and executive functions, contributing to their learning difficulties (Alloway *et al.*, 2005). These skills affect a major part of their school domain like mathematical ability development (Friso-van den Bos *et al.*, 2013), lower performance in tests assessing, for example, reading competence (Pohl *et al.*, 2016) and reasoning abilities (Kocaj *et al.*, 2014; Nusser and Messingschlager, 2018). All these impact greatly on the decision making skills of the SEN student. Effective KT tools can lessen these impacts.

Ability to Facilitate Exchange of Information

As stated above, SEN students experience lower cognitive abilities while another factor is the exchange of information. Previous research has found that SEN students are severely impaired in their ability to systematically acquire and retain new information having persistent and far-reaching limitations in coping with their academic requirements (Klauer and Lauth, 1997) because of their insufficient ability to acquire cognitive-verbal and abstract content (Grünke and Grosche, 2014). In this way, SEN student ability to exchange information is greatly affected. KT tools can alleviate this hardship by facilitating the exchange of information amongst individuals.

Ability to Facilitate Transfer of Knowledge

Inability to exchange information eventually leads to ineffective knowledge transfer. The difficulty in receiving and processing information leads to disinterest of the SEN student in learning. When individuals are not engaged in active cognitive processing, such as selecting relevant information, linking it to existing knowledge, and, ultimately, organizing it into a coherent mental model (Gyselinck *et al.*, 2008; Mayer and Moreno 2003), they do not understand what is being taught to them and eventually are left behind. The

inability to receive, process and execute thus affects the transfer of knowledge from other senders to the SEN students. As such, KT tools act as a facilitator in transferring knowledge.

Ability to Facilitate Communication

Many SEN students have delayed speech and difficulties to communicate. Consequently, efforts need to be made to value all children have the opportunities to express themselves in all ways and that all barriers hindering the voices of SEN students to be heard, be removed (Ashby, 2011; Ellis, 2017) which aligns with Doak's (2019) argument that children with complex needs communicate in a range of different ways and so creating opportunities for facilitating their voices must consider multi-modal expression and, therefore, methods that are tailored accordingly. Indeed, an important feature in a KT tool is to ease communication.

Ability to Connect with Different Stakeholders

Kurowski *et al.* (2022) mentioned a lack of support (material, technical, and training) for the pedagogical staff who need more preparation to work in the inclusive classroom. Hence, combining different fields of knowledge has been considered an ideal method to allow children to successfully participate in education (Piškur *et al.*, 2022). Moreover, to promote holistic development across life domains with SEN, different professionals from different disciplines (Occupational Therapists, Speech and Language Therapists, Physiotherapists, Psychologists and so on) should work together in providing services (Briggs, 1997; Rapport *et al.*, 2004). This study sparked an unprecedented need for a significant feature to aid the collaboration of different stakeholders for KT tools.

User-friendliness

As Bryant *et al.* (2019) stated, SEN comprises individuals with learning, physical, developmental, communication, behavioural, and emotional disorders and learning deficiencies. Subsequently, the intellectual level and physical impairment should be considered as these limitations prevent them from using the KT tool well. For a KT tool to be more adapted for SEN children, it should thus be easy to use (Miller, 1971) and user friendly.

Aesthetic

Several studies have indicated that visually attractive layouts contribute to users' overall satisfaction, interest, curiosity, and pleasant activation (Hartmann *et al.*, 2007; Wilhelm, 2009). Besides, aesthetic appeal improves the system's perceived usability (Moshagen *et al.*, 2009; Sonderegger and Sauer 2010). Hence, one important feature to consider is the appearance of the KT tools for attention purposes since SEN students, OTs, and other experts as users shall be engaged to achieve their learning goals.

METHODOLOGY

Methods

To investigate regarding the underlying latent factors required for a KT tool to be effective and efficient with SEN students in Mauritius, the researchers opted for a quantitative approach.

Participants and Recruitment

Using a purposive sampling process, 63 participants were selected for this study. Participants were selected based on certain specific criteria which were as follows:

- i. The Occupational Therapists should have at least one year of experience with SEN students,
- ii. They should be working in Mauritius,
- iii. They should be registered by the Allied Health Professional Council of Mauritius.

A first contact was made with the selected participants via phone throughout which the intention of the study and the objectives of the study were well explained. Subsequently, 8 participants withdrew from the study. Finally, the final sample of this study comprised of a total of 55 participants.

Data Collection Procedure

Data Collection was carried out individually with the 55 OTs. Following their verbal consent, a questionnaire together with a consent form were sent to them via email. Based on their availability, the participants were called via the WhatsApp platform and the questionnaire was read and explained to them. The responses were then recorded by the researchers.

Instrument Used

The data collection instrument used was a closed ended questionnaire which was designed to gather basic demographic information about the participants and responses of the importance of 8 different features needed for a KT tool be effective and efficient with a SEN student in Mauritius. The responses were measured through a five-point Likert scale consisting of 5 items defined as ‘NI = Not important; SI = Slightly important; MI = Moderately important; I = Important; VI = Very important.’

Reliability and Validity

As stated by Laerd Statistics (2018a), the measure of reliability for instruments containing groups of Likert-type statements is often through the Cronbach’s Alpha. For this study, the Cronbach’s Alpha coefficient was 0.892 which confirms the internal consistency of the survey questionnaire as it falls within the range 0.7 (Bujang *et al.*, 2018) and 0.95 (Nawi *et al.*, 2020; Dabbagh *et al.*, 2023). Finally, a sampling adequacy testing was carried out to determine whether exploratory factor analysis can be tested, using the Kaiser-Meyer-Olkin (KMO) statistic. The result for construct validity and sample adequacy was 0.765 having the *p*-value less than 0.01 for Bartlett’s test indicating that the validity testing was passed. Moreover, the sample was adequate for exploratory factor analysis, as all the KMO statistics were above 0.5 (Field, 2016).

Ethical Considerations

Ethical approval was awarded by the Research and Ethics Committee (REC) from the Ministry of Education, Tertiary Education, Science and Technology, Mauritius. Before the study commenced, the participants were provided with detailed information regarding the purpose of the study, the objectives, and the procedure to follow. Study participation in this study was voluntary and anonymous. All the data were collected anonymously, and confidentiality was guaranteed to all participants.

Statistical Analysis

All the statistical analyses were performed using the IBM SPSS Statistics 26 and Microsoft Excel 2019. At first instance a study of mean differences was carried out on the 8 different features of the Requirements of Effective and Efficient KT tool. Further to this, an inspection of factor structure of the preliminary questionnaire was conducted using the Exploratory Factor Analysis technique. Hence, Barlett’s sphericity test and Kaiser-Meyer-Olkin (KMO) measure were used to check the assumptions. Having all the 5 assumptions satisfied, the principal components analysis (PCA) was run from which 2 factors were extracted. However, the Cattell’s scree plot suggested 3 factors from which emerged the necessity of rerunning the PCA. Finally, 3 factors were extracted, detailed in the results section below.

RESULTS

Requirements of Effective and Efficient Knowledge Transfer Tools

The survey questionnaire on SEN children contained statements querying the qualities of effective and efficient knowledge transfer tools from OTs’ perspectives. As shown in **Table 1** below, each requirement was rated as very important, with all of them recording means that were at least 4.43 (out of 5).

TABLE 1
REQUIREMENTS OF EFFECTIVE AND EFFICIENT KNOWLEDGE TRANSFER TOOLS

<i>Requirement</i>	<i>NI</i>	<i>SI</i>	<i>MI</i>	<i>I</i>	<i>VI</i>	<i>Mean</i>
Ability to improve learning	0%	0%	4%	9%	87%	4.83
User-friendliness	0%	0%	6%	9%	85%	4.80
Ability to transfer knowledge	0%	0%	3%	17%	80%	4.76
Ability to facilitate communication	0%	0%	6%	22%	72%	4.67
Ability to facilitate exchange of information	0%	0%	6%	22%	72%	4.67
Ability to improve decision-making	0%	0%	12%	19%	69%	4.56
Ability to connect different stakeholders	0%	4%	9%	15%	72%	4.56
Aesthetic	0%	4%	8%	31%	57%	4.43

NI = Not important; SI = Slightly important; MI = Moderately important; I = Important; VI = Very important

Based on the above figures, the ability to improve learning ($MI = 4\%$, $I/VI = 96\%$, $M = 4.83$) and user-friendliness ($MI = 6\%$, $I/VI = 94\%$, $M = 4.83$) were considered to be the most important attributes of an effective and efficient knowledge transfer tool. To a slightly lesser extent, the ability to transfer knowledge ($MI = 3\%$, $I/VI = 97\%$, $M = 4.67$), and facilitate communication ($MI = 6\%$, $I/VI = 94\%$, $M = 4.67$) and exchange of communication ($MI = 6\%$, $I/VI = 94\%$, $M = 4.67$) were deemed to be just as important.

Nonetheless, the tool's ability to improve decision-making ($MI = 12\%$, $I/VI = 88\%$, $M = 4.56$) and to connect different stakeholders ($NI/SI = 4\%$, $MI = 9\%$, $I/VI = 87\%$, $M = 4.56$) were rated as slightly less important than their predecessors in the table. Lastly, the aesthetic aspect of an effective and efficient knowledge transfer tool was last-ranked ($NI/SI = 4\%$, $MI = 8\%$, $I/VI = 88\%$, $M = 4.43$).

On a different note, since the above construct was neither an independent or the dependent variable of this part of the study, the responses to the statements measuring it were used to run a factor analysis in SPSS (see Section 5.3 below), with a view to unveil the requirements underpinning an effective and efficient knowledge transfer tool from the point of view of OTs.

Exploratory Factor Analysis

The second part of quantitative analysis entailed conducting an exploratory factor analysis (EFA) of the responses to the statements measuring *Requirements of Effective and Efficient Knowledge Transfer Tools* in the survey questionnaire. This analysis aimed to find latent factors which could be underlying this construct. The unveiling of factors or dimensions underpinning *Requirements of Effective and Efficient Knowledge Transfer Tools* cascades down from the argument that factor analysis “identifies the smallest number of hypothetical constructs (factors, dimensions, latent variables, synthetic variables or internal attributes) that can parsimoniously explain the covariation observed among a set of measured variables” (Watkins, 2018). EFA requires data assumptions to be checked to ensure the items (statements) are factorable.

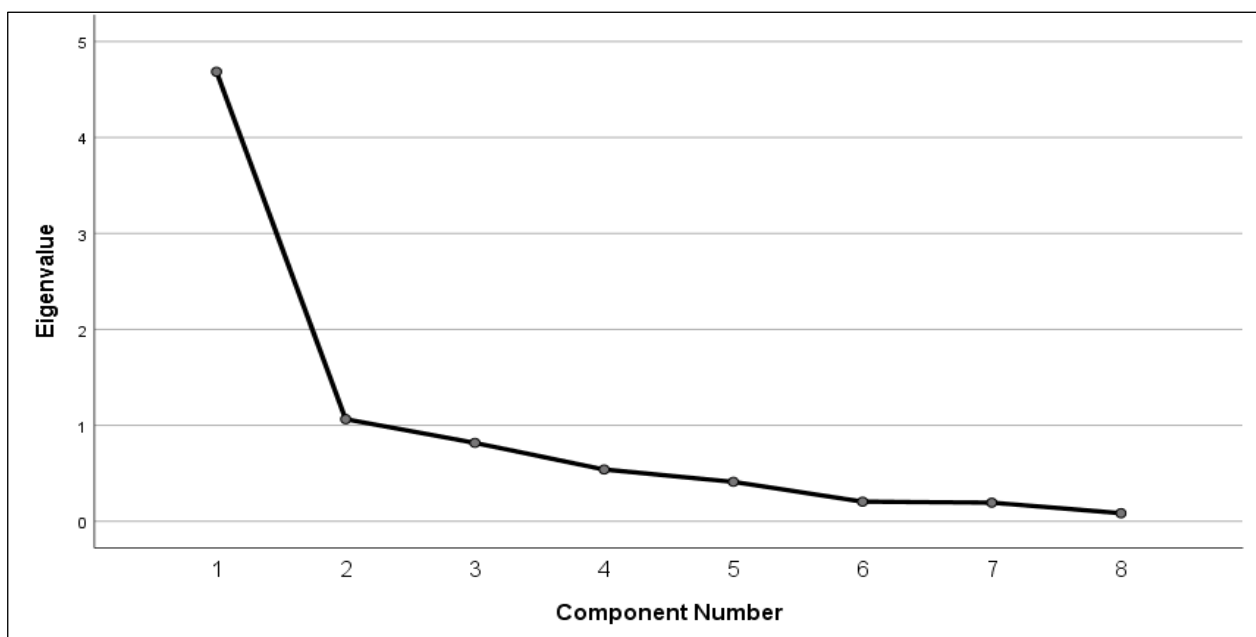
Testing of Assumptions

As explained further, five data assumptions were checked, the results obtained by using principal components analysis with Varimax rotation in SPSS. First of all, Bartlett's test of sphericity was found to be significant at the 1% level ($\chi^2 = 287.232$, $p < .01$), showing that all the statements actually measured *Requirements of Effective and Efficient Knowledge Transfer Tools*, thus passing the construct validity test (Nijs, 2019). Secondly, the Kaiser-Meyer-Olkin statistic of .765 (greater than 0.5) indicated that the sample

was adequate for factor analysis (Amerioun *et al.*, 2018). In the correlation matrix, each item had at least one correlation coefficient of at least 0.5 with another item (Zeynivandnezhad *et al.*, 2019), while all the diagonal elements of the anti-image correlation matrix were 0.594 or more, in line with the minimum threshold value of 0.5 (James Cook University, 2023). Lastly, the communalities were at least 0.755, comfortably exceeding the required minimum value of 0.4 (Eaton *et al.*, 2019). With all these five assumptions being satisfied, the items were expected to be very easily factorable.

On running principal components analysis (PCA) in SPSS, two factors were extracted, based on Empirical Kaiser Criterion (Braeken and van Assen, 2017), explaining 71.865% of the cumulative variance. However, Cattell's scree plot (Sürücü *et al.*, 2022) suggested that there could be three latent factors, as indicated by the "elbow" in **Figure 1** below, which is the last point followed by a line segment with the highest slope, compared to subsequent line segments.

**FIGURE 1
SCREE PLOT**



PCA was thus rerun in SPSS by fixing the number of factors to be extracted at 3. The latter factors explained a cumulative variance of 82.081%, which suggested an excellent model.

Reporting of Results

A summary of the three extracted factors is given **Table 2**, which shows the statements grouped under each factor, their factor loadings, each factor's eigenvalue and its percentage explained after Varimax rotation. Based on the grouped statements, the three extracted factors were named as *Knowledge-Sharing Ability*, *Ability to Enhance Critical Thinking Skills* and *Aesthetic-Usability Effect*.

TABLE 2
SUMMARY OF ROTATED COMPONENT MATRIX (EXPLORATORY FACTOR ANALYSIS)

<i>Rotated factors (% variance explained; eigenvalue)</i>	<i>Requirements of effective and efficient knowledge transfer tools</i>	<i>Factor loading</i>
Knowledge-Sharing Ability (34.417%; 4.685)	Ability to facilitate exchange of information	.851
	Ability to connect different stakeholders	.846
	Ability to transfer knowledge	.748
	Ability to facilitate communication	.633
Ability to Enhance Critical Thinking Skills (29.404%; 1.064)	Ability to improve learning	.649
	Ability to improve decision-making	.598
Aesthetic-Usability Effect (18.260%; 0.817)	User-friendliness	.930
	Aesthetic	.860

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.a

a. Rotation converged in 6 iterations.

A composite score was computed for each factor (**Table 3** below), based on the mean of the items that had their loadings on each factor. In the context of this research and in relation to the measurement scales of the statements, a higher mean (out of 5) meant that OTs found the factor more important in enhancing the effectiveness and efficiency of the knowledge transfer tool. Moreover, the reliability of each extracted factor was computed in SPSS, giving relatively high values ranging from .685 to .844, equivalent to unidimensionality (Ziegler and Hageman, 2015).

TABLE 3
DESCRIPTIVE STATISTICS

	<i>No. of items</i>	<i>Mean</i>	<i>Std deviation</i>	<i>Reliability (α)</i>
<i>Knowledge-Sharing Ability</i>	4	4.66	.523	.844
<i>Ability to Enhance Critical Thinking Skills</i>	2	4.69	.544	.764
<i>Aesthetic-Usability Effect</i>	2	4.61	.547	.685

From the perspective of sampled OTs, all three underlying factors are important, as they recorded means of at least 4.61 out of 5. However, OTs ranked *Ability to Enhance Critical Thinking Skills* as the top quality of an effective and efficient knowledge transfer tool ($M = 4.69$, $SD = 0.544$), very closely followed by *Knowledge-Sharing Ability* ($M = 4.66$, $SD = 0.523$), with *Aesthetic-Usability Effect* being third-ranked ($M = 4.61$, $SD = 0.547$).

DISCUSSIONS

Effective and efficient knowledge transfer tools have become necessary to meet the aims of ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all, stimulated by the 2030 Sustainable Development Goal for Education (SDG4). On the opportunity front, specific educational responses need to initiate to compensate for the significant difficulties that some SEN students experience, to overcome some of the disparities in access to education (Otieno *et al.*, 2023). Knowledge transfer is the movement of knowledge through a/ some channel(s) from one individual to another (Abou

Hashish, 2017), hence, this study focused on the transfer of knowledge from the OTs to SEN students. Different forms of knowledge transfer can manifest in different ways and with different methods (Lehner, 2021) and for this study knowledge is being transferred from OTs to SEN students through KT tools. However, it should be noted that SEN students have diverse learning profiles which are affected by many limitations due to their disabilities. This research emphasized investigating some important features required for a KT tool to effectively and efficiently promote learning in SEN. The requirements outlined where the KT tool should have the ability to improve learning, transfer knowledge, facilitate exchange of information and communication, improve decision-making, connect different stakeholders, be user-friendly and have an aesthetic look. Out of the 8 requirements, the ability to improve learning was rated the highest with a mean of 4.83 out of 5. As stated by UNESCO (2011), a SEN child has more significant difficulties than the rest of his/her peers in accessing the learning that corresponds to his/her age or grade and requires extraordinary and specialized support to compensate for these difficulties, which, if not provided, limits his/her learning and development opportunities. Therefore, this meets the purpose of devising a KT tool for SEN. The main objective of designing a KT tool for SEN will be to improve learning. Since all the OTs share the same opinion, it demonstrates the importance of having KT tool in the educational system for SEN students.

The second most rated requirement is user friendliness. The term SEN refers to individuals with learning, physical, developmental, communication, behavioural, and emotional disorders, and learning deficiencies (Bryant *et al.*, 2019). They already have lower peer acceptance, less friendships, and less interactions than their peers (Schwab *et al.*, 2021), therefore, KT tools should promote their interaction and participation in social and academic activities. User friendly KT tools may enhance the self-confidence of SEN and motivate them to participate more in social and academic activities. Therefore, this may one of the reasons why OTs rated user-friendliness as the second most rated requirement of a KT tool.

Further analysis of Table 1 pinpointed towards a uniformity of ratings on behalf of all the OTs. None of them rated any of the qualities mentioned above as 'Not Important'. All the OTs acknowledged that all the qualities mentioned are suited to be featured in a KT tool for SEN. Moreover, the columns of 'Slightly Important', 'Moderately Important', and 'Important', have been minimally rated. The column of 'Very Important' has been rated as the highest by all the OTs indicating that all the qualities mentioned in Table 1 are significant in a KT tool for SEN.

To complement ranking of the features, an exploratory factor analysis was conducted to find the latent factors which could be underlying the construct of requirements of effective and efficient knowledge transfer tools. Following the Cattell's scree plot, three latent factors were indicated by the 'elbow', categorized as *Knowledge Sharing Ability*, *Ability to Enhance Critical Thinking Skills* and *Aesthetic-Usability Effect*. This outcome was further worked out using weighted means from which the highest mean reported was that of *Ability to Enhance Critical Thinking*.

Prior literature described cognitive abilities as basic reasoning skills which are a central predictor of many important life outcomes (Deary *et al.*, 2007; Strenze, 2007; Gnambs, 2017). Various studies have shown that students with SEN, on average, show lower performance in tests assessing, for example, reading competence (Pohl *et al.*, 2016), mathematical competence (Wocken and Gröhlich, 2009), or reasoning abilities (Kocaj *et al.*, 2014; Nusser and Messingschlager, 2018) as compared to students from regular schools. They often struggle with difficulties with working memory and executive functions contribute to learning difficulties among children identified as having SEN (Alloway *et al.*, 2005) and that working memory and executive functions particularly are underlying mathematical skill development in primary school children (Friso-van den Bos *et al.*, 2013). Henceforth, the results of this research favor SEN students to develop *Ability to Enhance Critical Thinking* as a feature of KT tool which in turn enhances working memory, cognitive and all the related competencies like reading and mathematical. The prior literature justifies why OTs rated this feature as the most important one of all.

Knowledge Sharing Ability has been rated as the second most important amongst the 3 latent factors. SEN refers to individuals with learning, physical, developmental, communication, behavioural, and emotional disorders, and learning deficiencies (Bryant *et al.*, 2019). As a result, they have difficulty processing and retaining information, communicating with others and socializing with the society. Hence,

SEN place greater demands on educators to create adaptable and inclusive educational materials that cater to diverse learning styles (Euser *et al.*, 2016; Wissink *et al.*, 2015). Consequently, efforts need to be made to value all forms of expression so that barriers to the voices of all children being represented and facilitated can be removed (Ashby, 2011; Ellis, 2017). This aligns with Doak's (2019) argument that children with complex needs communicate in a range of different ways, so creating opportunities for facilitating their voices must consider multi-modal expression and, therefore, methods that are tailored accordingly. In this context, the feature of sharing knowledge is a help to SEN and all the stakeholders around SEN to understand and work with SEN.

Finally, the least rated feature factor was Aesthetic-Usability Effect. SEN students experience challenges in processing sensory information—such as difficulties with auditory, visual, tactile, or proprioceptive stimuli—can hinder their ability to effectively interact with their environment and comprehend information presented to them ((Wu *et al.*, 2010 and Pătrăș and Stefanica, 2019). Several studies have indicated that visually attractive layouts contribute to users' overall satisfaction, interest, curiosity, and pleasant activation (Hartmann *et al.*, 2007; Wilhelm, 2009). Moreover, aesthetic appeal is said to improve the system's perceived usability (Moshagen *et al.*, 2009; Sonderegger and Sauer, 2010). Hence, the Aesthetic feature can increase the satisfaction, interest, curiosity and pleasant activation in SEN students, eventually improving the usability of the KT tools in their daily lives.

CONCLUSION

This study provided an overview of the different features the authors thought would be meaningful in designing an effective and efficient KT tool for SEN and eventually the results proved that the features were in accordance with all the OTs who participated in this study. The *Ability to Enhance Critical Thinking Skills* has been ranked as the top quality of an effective and efficient knowledge transfer tool for SEN students in Mauritius. However, the investigation was on the features of KT tool for SEN and the term SEN is an umbrella term covering many disabilities. It is recommended that further studies be done for specific disability. Moreover, OTs are one of the experts working with SEN. Insights from other educational stakeholders also are needed. Proposed further study should be to consider other educational stakeholders as sample. Another impactful future work proposed is towards an integrated digitalized KT tool comprising of these discovered features, namely *Ability to Enhance Critical Thinking*, *Knowledge Sharing Ability*, and *Aesthetic-Usability Effect* embedded and to be adopted not only by the OTs, but also by the learning support system of the SEN children which consist of the speech therapist, SEN teacher, SEN teacher assistant, SEN carer, and even the parents. Nevertheless, one limitation of this research worthwhile mentioning is the small sample size of OTs in Mauritius. Although the gap in this field is quite large, implementing proposed slight initiatives may eventually contribute to the study achievement.

DATA AVAILABILITY STATEMENT

All data are available and can be requested from the corresponding author.

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