

Effect of Discrete Learning Implementation on Adaptive Skill Acquisition of Autistic Learner in Tharaka Nithi County, Kenya: Positioning Prospects, Policy and Practice

Gatuura Festus Doris, Odundo Paul Amollo, Theresa Kazungu, Ganira Khavugwi Lilian

Department of Educational Communication, Technology and Pedagogical Studies, University of Nairobi, Nairobi, Kenya

Email address:

dgatuura@gmail.com (Gatuura Festus Doris), odundopaul@yahoo.com (Odundo Paul Amollo), heriester@yahoo.com (Theresa Kazungu), lilianganira@gmail.com (Ganira Khavugwi Lilian)

To cite this article:

Gatuura Festus Doris, Odundo Paul Amollo, Theresa Kazungu, Ganira Khavugwi Lilian. Effect of Discrete Learning Implementation on Adaptive Skill Acquisition of Autistic Learner in Tharaka Nithi County, Kenya: Positioning Prospects, Policy and Practice. *Teacher Education and Curriculum Studies*. Vol. 8, No. 3, 2023, pp. 137-145. doi: 10.11648/j.tecs.20230803.14

Received: April 6, 2023; **Accepted:** May 11, 2023; **Published:** August 9, 2023

Abstract: Adaptive skill acquisition is premised on effective discrete learning implementation to support functionality of autistic learner. Non appropriate implementation may compromise learner functionality due to low adaptive skills acquisition. Efficient implementation is underpinned on interest discovery, making learning fun, provision of hands on experiences which may increase adaptability of autistic learner. Discrete learning premised on instructional delivery, response recording and repeated instructions may help overcome issues emanating from non-participation in learning activities to accelerate adaptive skills acquisition for survival. Study sought to establish effect of discrete learning implementation, on adaptive skill acquisition of autistic learner in Tharaka Nithi County, Kenya: positioning prospects, policy and practice. Study was anchored on executive dysfunction theory of autism which depicts that autistic learners are challenged in understanding complex tasks minimizing adaptive skills acquisition. Study embraced correlation coefficient design to examine effect of discrete learning on skill acquisition without control nor manipulation. Public primary schools sheltering special needs learners formed target population while suitable sample was obtained using purposive sampling for autistic learner's teachers and stratified random sampling for stakeholders. Data was obtained from 17 respondents; 13 teachers and 4 stakeholders using questionnaire. Pearson correlation coefficient indicated a P value of ≤ 0.05 indicating a statistical significance of implementation on acquisition of adaptive skills. Descriptive analysis indicated Means of repeated instruction; 2.71, instruction delivery; 2.29 and response recording; 1.96 insinuating a positive effect. Policy positioning on discrete learning implementation, refresher courses to expedite effective implementation and further research on interventions for adaptive skills acquisition.

Keywords: Discrete Learning, Instruction Delivery, Instruction Repetition, Response Recording, Skill Acquisition

1. Introduction

Discrete learning embrace clear, consistent and organized procedures in teaching autistic learner geared towards enhancing acquisition of adaptive skills to support independency in school and society. In addition, appropriately implemented discrete learning enhance adoption of instructional procedures which may accelerate acquisition of adaptive skills such as communication competence, social integration and self-awareness resulting to integration of autistic learner in society. However, improper implementation of discrete learning may compromise

acquisition of adaptive skills minimizing adaptability of autistic learner in both school and community. As noted by Gatuura and Mugo (2020), suitable instructional strategies support participation in learning activities through increased attentiveness, motivation and concepts understanding which may result to acquisition of adaptive skills by autistic learner for positive living [11]. Further analysis by Ganira (2022) study on adopting STEAM development strategies in early years education postulates that discrete learning is premised on implementation of instructional strategies by putting into action the activities formulated geared towards acquisition of adaptive skills by autistic learner [9]. More so rightful

implementation of discrete learning may involve instruction delivery, data recording and instruction repetition which when accurately accomplished may promote acquisition of adaptive skill for positive engagement in society. In support of these sentiments, Pratt and Steward (2020), argued that effective discrete learning implementation for supporting adaptive skill acquisition may be anchored on pillars namely; Teachers instruction, learner's response and consequence for efficient acquisition of adaptive skills by autistic learner [20]. On the same vain incorrect implementation of adaptive skills renders pillars unproductive thus degrading acquisition of adaptive skills by autistic learner lowering integration in the society.

Further, purposeful implementation of discrete learning may be anchored on the mode of instruction delivery premised on conducive environment, visual stimuli, building trials and use of prompts that necessitate acquisition of skills for adaptability of autistic learner in class and wider society. In support of this argument Landoy, Popa and Repanovici, (2020) stated that effectiveness of an instructional strategy on adaptive skills acquisition depends on autistic learner's participatory in learning activities enhanced by conducive environment which accommodate interactive learning sessions, Visual stimuli like photographs, videos, charts to create a conviction and lifelong memories [15]. Premised on this realization Ganira, Odundo, Ciumuari, and Juliet (2019) argued that effectiveness of instructional strategies influence learning as well as achievement in skills which may enhance integration in community [7]. For instance instructional materials like daily planner and checklists may be used to compliment strategies employed in teaching to broaden understanding capacity of autistic learner for increased acquisition of adaptive skills for positive living. Similarly, with a well adopted policy, discrete learning would constitute appropriate instructional strategies and materials which when consistently used may support adaptive skill acquisition by autistic learner for positive engagement in the society. However, with non-defined discrete learning implementation modalities, acquisition of adaptive skills may be impaired diminishing adaptability of autistic learner in class and home.

Correspondingly, efficient implementation of discrete learning may be actualized when teacher and autistic learner are actively involved in learning activities for quick acquirement of adaptive skills for survival. Furthermore teacher's instruction and learner's response hasten interaction in class—which may increase participation in learning activities supporting acquisition of adaptive skills for positive living in school. Based on this argument, Karpin and Mahmudatussa'adah (2020) designated that active participation of autistic learner in learning activities, increases communication abilities, attentiveness and motivation of autistic learner for speeded achievement in adaptive skills [13]. However, non-participation in learning activities, diminish acquisition of adaptive skills which may result to isolation and rejection of autistic learner in school and wider society. Furthermore, Odundo and Ganira (2022) aver that discrete learning call for a consistent recording of

responses immediately to enable monitoring of learning process for accelerated skill acquirement by autistic learner for survival [17]. In connection to this argument, autistic learner's responses to instruction may be recorded as incorrect indicating non-acquisition of the skill, correct stipulating ability to perform a given task or prompted designating the learner was assisted to provide correct response for adaptability.

More still discrete learning method, necessitate content repetition regularity during instruction to assist autistic learner acquire adaptive skills for survival in wider society. More over discrete learning encompass instruction repetition which may advance acquisition of adaptive skill by teaching a concept consistently until mastery is achieved for independent functioning. In stances where non-repetition is compromised, mastery of concepts may be handicapped resulting to non-acquirement of adaptive skill by autistic learner leading to non-integration in society. In accordance to analysis on effectiveness of oral repeated reading with autistic language learners, Kahraman and Tekşen (2019) argued that repeated reading upgraded flow of reading skills and understanding of vocabularies indicating acquisition of communication skills [12]. This view is supported by Mailo, Odundo and Ganira (2022) argumentation that discrete learning employs repeated instruction on the target adaptive skills like communication, social abilities and self-awareness, a situation that increases mastery of the content resulting to acquisition of adaptive skills by autistic learner for adaptability in wider society [16].

More still appropriate implementation of discrete learning may support acquisition of adaptive skills when anchored on a clear, consistent and well planned instruction delivery, response recording and instruction repetition for positive engagement in the society. However, wavering interconnection between instruction delivery, response recording and instruction repetition may frustrate implementation of discrete learning limiting adaptive skill acquisition which may decline not only independency of the learner, but also academic performance. In a study on factors affecting acquisition of adaptive behavior skills among learners with intellectual disabilities in selected primary special schools and units in Thika Sub County, Kiambu County, Kenya, Kinuthia (2017) asserted that acquisition of adaptive skills was impaired by insufficient teaching strategies or methods, teaching activities and scanty curriculum content [14]. Based on this, the study sought to establish effect of discrete learning implementation on acquisition of adaptive skill of autistic learner in Tharaka Nithi County, Kenya:

1.1. Statement of the Problem

Rightful discrete learning implementation entails use of instructional strategies that support adaptive skill acquisition for efficient functioning in the society. In instances where proper implementation of discrete learning is dependent on teacher preparedness to impart knowledge, a conducive environment that support instruction delivery, a defined

system that allow recording of learner's response to instructions and consistency in instruction repetition are ensured and this may maximize potentiality of autistic learner in adaptive skill acquisition for healthy relationships in community. Further non preparedness of teacher to actualize instruction delivery, recording of learner's response and instruction repetition, may weaken effectiveness of discrete learning in supporting adaptive skill acquisition by autistic learner leading to discrimination in school and society. More still, unsupportive structures like scanty curriculum, paucity of policies, insufficient training in autism may contribute to unpreparedness of teacher in implementing discrete learning diminishing adaptive skill acquisition culminating to rejection of autistic learner in school and at home. More so, unsupportive structures may hinder implementation of instruction delivery, response recording and instruction delivery in classroom minimizing the acquisition of adaptive skills by autistic learner for survival. Based on these sentiments the study sought to establish effect of discrete learning implementation, acquisition and adaptive skill of autistic learner in Tharaka Nithi County.

1.2. Study Objectives

The study was guided by specific objectives as follows; Examine effect of instruction delivery on acquisition of adaptive skill by autistic learner; Establish effect of response recording on acquisition of adaptive skill by autistic learner and Assess effect of instruction repetition on acquisition of adaptive skill by autistic learner. To address the objectives the following hypothesis were adopted; H_0 There is no significant effect of instructional delivery on adaptive skill acquisition; H_0 There is no significant effect of response recording on adaptive skill acquisition; H_0 There is no significant effect of instruction repetition on adaptive skill acquisition.

The study may benefit stakeholders in policy formulation and practice to adopt discrete implementation in teaching to support acquisition of adaptive skills for efficient functioning of autistic learner in school and wider society.

2. Literature

Effectiveness of discrete learning lies on teacher proficiency in instructional strategies and methodologies which may support adaptive skill acquisition for autistic learner productive engagement in life. In instances where discrete learning is poorly implemented, acquisition of adaptive skills is degraded, disorienting autistic learner adaptability in the society. Discrete learning is propositioned on instruction delivery, recording of learner's response and repetition of instruction for effective acquisition of adaptive skills.

2.1. Instruction Delivery and Adaptive Skill Acquisition

Discrete learning method encompass clear, consistent and organized procedures for conveying concepts to autistic

learner, that may positively influence adaptive skill acquisition to support functionality of autistic learner in school and wider society. In instances where inappropriate adoption of discrete learning occasioned by weak curriculum tend to be detrimental in acquisition of adaptive skills minimizing integration of autistic learner in society. Premised on this view, Detrich and Keyworth (2018) argued that opportune instructional delivery arouses interest for participation in a well-outlined learning activities which may expose autistic learner to opportunities that trigger response and exercising of the lesson content to assist acquisition of adaptive skills for survival [6]. In addition Landoy, Popa and Repanovici (2020) further states that among many teaching approaches including teacher or learner centered, content focused and interactive or participation approaches, an instructional approach applied in discrete learning may support participation in learning ventures by unfolding abilities of autistic learner for effective acquisition of adaptive skills for positive living [15].

Effectiveness of instructional delivery depends on conducive environment, visual stimuli, use of prompts and building of trial sessions which when appropriately administered may support acquisition of adaptive skills for adaptability of autistic learner in school and home context. As noted by Odundo, Kinyua, and Ganira, (2018) study on adopting value creating pedagogy, learning environment encompass both physical involving classroom and social including learners, teachers, learning activities as well as curriculum, both of which may greatly impact acquisition of adaptive skills for appropriate interaction of autistic learner in school [19]. In the same vein, discrete learning complimented with stable curriculum, social and physical environments tend to stimulate mastery of concepts for acquisition of adaptive skills for a healthy relationships engagement by autistic learner. To address this, stakeholder involvement through policy orientation may support actualization of discrete learning by instructional delivery, execution of learning activities, acquisition of materials and regular inspection of environment for a successful adaptive skill acquirement for effective functioning of autistic learner in school and society.

2.2. Response Recording and Adaptive Skill Acquisition

Discrete learning is premised on response to imply level of instruction comprehension by autistic learner in relation to adaptive skill acquisition for adaptability in class and society. With regard to discrete learning, response may be presented in form of verbal, written or task performance. However, non-response by autistic learner insinuate low comprehension of instruction which tend to minimize acquisition of adaptive skills for positive engagement in social life. Further, autistic learner's responses in discrete learning indicate assimilation of instruction which may support implementation of adaptive skill acquisition for healthy relationships. As noted by Karpin and Mahmudatussa'adah (2020) argument, responding to instruction boost participation in learning activities through increased learner motivation, attentiveness, communication

and interchanging of ideas with learners and teachers for efficient acquisition of adaptive skills [13]. Drawing from this, discrete learning postulates that teacher's instruction, trigger learner's response which may indicate accurate or faulty adaptive skill acquisition depending on the response provided. On the same vein, Ganira and Odundo (2020) denotes that to support learning, teacher present a question and response hint which may guide the learner on the feedback expected to signify level of adaptive skill acquisition for positive engagement in society [8]. In addition discrete learning recommends for recording of learner's response immediately as either Incorrect indicating non-acquirement of the skill, correct stipulating performance of a given task or prompted designating assisted to provide correct response to support acquisition of adaptive skills for positive engagement in life.

In support of this Wójcik, Eikeseth, Eldevik and Budzińska (2020) illustrates that recording of responses marks ability of learner in understanding instruction which may be measured through performing the task [23]. In addition, Ganira and Odundo (2020) asserted that recording of responses facilitate tracking of learning progress as a result of constant review of the record which may instigate adoption of an alternative instruction strategy in case of impaired adaptive skill acquisition [8]. This is in collaboration with Wójcik, Eikeseth, Eldevik and Budzińska. (2020) contention that autistic learner participation in learning activities by responding to instruction correctly may accelerate learning and mastery of the concepts to support independency and functionality of the learner in school and community [23]. Even though teaching of autistic learner is a critical endeavor, stakeholders' involvement is necessary through formulation of policy that govern implementation of discrete learning to stimulate and sustain participation of autistic learner in learning activities for acquisition of adaptive skills for survival at home and school context.

2.3. Repeated Instruction and Implementation of Adaptive Skill Acquisition

Discrete learning entails consistency and regularity in providing instruction to strengthen acquisition of learnt concepts through unveiling new skills and practice by autistic learner for adaptability. Irregularity in instruction repetition diminish learning of new concepts lowering acquisition of adaptive skills by autistic learners. More so, discrete learning postulates that instruction repetition aid acquisition of adaptive skills through enhanced mastery and automaticity in communication skills, social skills and self-care skills that ease participation in both school and societal activities. In furtherance of this Kahraman and Tekşen (2019) asserted that repetition in oral reading increased fluency in reading and understanding of vocabularies in English [12].

Similarly, discrete learning necessitate instruction repetition, an aspect that boost performance of a task repetitively until acquisition of skills like communication, social and self-care are achieved for survival. In support of

the argument by Kahraman and Tekşen (2019), implementation of instruction repetition in varied environments may support generalization of acquired skills for functionality of autistic learner across context [12]. Further repeated instruction complimented with appropriate instructional strategies and resources inculcate mastery of skills which build confidence of the learner in performing activities that support acquisition of adaptive skills for survival. In favor of this argument Bekele, Odundo, Mwangi, and Ganira. (2022) asserts that instructional resource when utilized maximally support achievement of learning goals for efficient coexistence [2]. Further, there may be policies to enhance provision, adequacy and utilization of resources in teaching autistic learner to minimize wastage and underutilization to facilitate acquisition of adaptive skills through repeated instruction for adaptability.

2.4. Theoretical Framework

Executive dysfunction theory of autism by Pennington and Ozonoff (1996) guided the study. In the same vein, theory postulates that autistic learners are challenged in understanding composite task comprised of unreal concepts due to dysfunction of working memory, cognitive flexibility and inhibition control. In addition, dysfunctions obstruct planning, reasoning and problem solving which may minimize acquisition of adaptive skills like communication, self-care and social lowering positive engagement in society. However, a well-organized vigorous training encompassing effective instructional delivery, response recording and instruction repetition may expose the learner to knowledge acquisition and operationalization suppressing the dysfunction aspect. Further, theory proponent proposes that creation of a conducive environment and visual stimuli or learning materials immensely support learning of adaptive skills for adaptability of autistic learner. For instance, use of daily planner and checklists may be used as instructional materials to direct learning activities which may support adaptive skill acquisition for increased planning, reasoning and problem solving. In addition executive dysfunction theory of autism postulates that, parents and teachers may support autistic learner in homework completion and organization to reverse inappropriate learning process and instill acquisition of adaptive skills. Executive dysfunction theory of autism further emphasize that more time, stepwise and repeated instructions may be practiced during teaching to support acquisition of adaptive skills by autistic learner for integration in the school and society.

2.5. Conceptual Framework

Figure 1. Perceived framework on effect of discrete learning on implementation, acquisition and adaptive skill.

The perceived framework shows interrelationship between discrete learning implementation and adaptive skill acquisition.

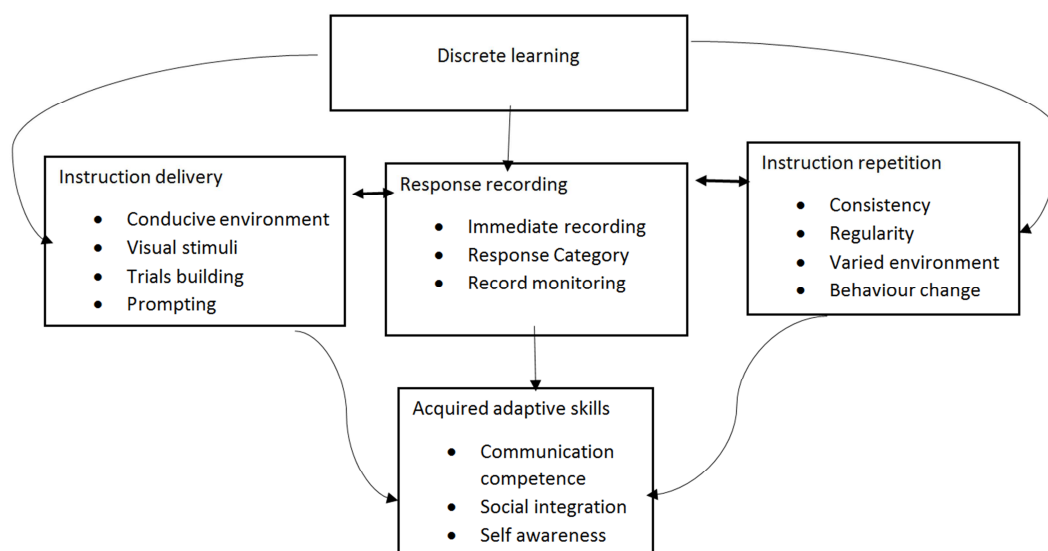


Figure 1. Effective discrete learning is premised on instructional delivery which together with Response recording and instruction repetition strengthen learning and performance of basic tasks like self-expression through verbal and nonverbal communication, friendship formation as well maintain cleanliness marking acquisition of adaptive skills.

3. Methodology

Positivism research paradigm premised on analytical methods to uncover knowledge and explain causal relationship between phenomena guided the study. In addition, philosophical view of Positivism paradigm include Ontology, epistemology and axiology which operates interactively to influence knowledge. More still Ontology entails expounding and transmission of data at disposal because reality exists independently minimizing biasness. Axiology encompass objectivity of data collection which is ensured by neutrality of researcher in the whole process. To support the argument Anyienda (2021), noted that paradigm maintains objectivity of process with non-interference of investigator with phenomenon under scrutiny [1]. Further, Epistemology entails scientific methods of data collection and analysis, features that informed the study which sought to establish effect of discrete learning on implementation, acquisition and adaptive skill acquisition. Besides correlational research a non-experimental design was ratified for the study. As noted by Bhandari (2022) the design look into relationships between variables without manipulation nor control during study [3]. Moreover, the design deemed appropriate for the study because variables were not manipulated nor controlled rather data was collected through questionnaires.

Public primary schools housing learners with special needs formed target population. In the same vein, appropriate sample size was drawn from primary schools with autistic learners comprising of 17 respondents where 13 teachers were purposively sampled while 4 stakeholders random stratified sampling was adopted. Besides, Qualitative approach captured opinions from respondents on implementation of adaptive skill acquisition and quantitative approach quantified the data into numerical to generate

descriptive statistics and inferences. More still close ended questionnaires collected data on implementation of instruction delivery, response recording and instruction repetition from teachers while stakeholders provided information regarding support accorded to teachers during implementation. Moreover data was analyzed quantitatively using descriptive statistics creating frequency tables, means and standard deviations whilst qualitative data was coded as per themes to make inferences. Furthermore, Pearson correlation coefficient determined statistical significance levels at a p value of 0.05 to establish effect of implementation on acquisition of adaptive skills.

4. Findings

4.1. Discrete Learning and Adaptive Skills Acquisition

Efficient acquisition of adaptive skills is propositioned on implementation of discrete learning instructional strategy for adaptability of autistic learner in society. In cases where implementation is unjustly accomplished, the acquisition of adaptive skill is demeaned which may result in a feeling of rejection by autistic learner. In the view of Bekele, Odundo, Mwangi and Ganira, (2022), acquisition of adaptive skill is influenced by instruction delivery, repetition and response recording during learning activities [2]. Besides, the study sample size was 17 respondents of which 13 were teachers and 4 stakeholders. More still, 100 percent response rate was ensured through self-administration of questionnaires, resulting to collection of concrete data that empower drawing of accurate inferences on effect of discrete learning on acquisition of adaptive skills.

4.1.1. Instruction Delivery and Adaptive Skill Acquisition

Mode of conveying concepts to autistic learner, determine the acquisition of adaptive skills for integration in community. In the same vein, inaccurate conveyance of

learning concepts is brought about by weak instructional delivery, which tend to minimize acquisition of adaptive skills therefore lowering functionality level of the learner. Efficient instruction delivery rests on conducive environment, visual stimuli, building trials and use of prompts during

learning activities. Pearson Correlation coefficient was used to establish the relationship between the parameters to draw a conclusion regarding effect of instruction delivery on adaptive skills acquisition. The findings are illustrated in Table 1.

Table 1. Instruction Delivery correlation coefficient.

		Creating conducive environment	Availing visual stimuli	Building 10 trials per session
Creating conducive environment	Pearson Correlation	1	-.123	.507
	Sig. (2-tailed)		.689	.077
	N	13	13	13
Availing visual stimuli	Pearson Correlation	-.123	1	.133
	Sig. (2-tailed)	.689		.664
	N	13	13	13
Building 10 trials per session	Pearson Correlation	.507	.133	1
	Sig. (2-tailed)	.077	.664	
	N	13	13	13
Use of prompts	Pearson Correlation	-.296	.376	-.437
	Sig. (2-tailed)	.326	.206	.136
	N	13	13	13

Rightful instruction delivery institute well-planned learning activities supported by appropriate blending of conducive environment, visual stimuli, building of trials and use of prompts for acquisition of adaptive skills for healthy relationships. Findings from Table 1, revealed a positive interaction of conducive learning environment and building trials ($r=.507$, $p=.07$ $N=13$) an implication that the number of trials built during instruction was influenced by environment in which learning occurred resulting to improved acquisition of adaptive skills by autistic learner for productive engagement in class and home contexts. The findings are in agreement with Ugalde, Santiago-Garabieta, Villarejo-Carballido, and Puigvert, (2021) observation that an interactive learning environment comprised of both physical including space and social including teachers, learners as well as curriculum including content greatly improve acquisition of adaptive skills like communication, social and self-awareness for integration in society [21]. Findings from stakeholders on support accorded to teachers during discrete learning implementation, 2 out of 4 suggested that conducive environment is ensured through creating space by classroom construction where learning occurs so supporting acquisition of adaptive skills. Similarly findings in Table 1, affirmed a positive connection between visual stimuli with building trials ($r=.133$, $p=.664$ $N=13$) and use of prompts ($r=.376$ $p=.206$ $N=13$) an indication that building of trials and use of prompts was greatly influenced by availability of visual stimuli or learning materials like flashcards, toys, building blocks and timers which may arouse learning interest thus increasing acquisition of adaptive skills by autistic learner. Additionally findings revealed that the 4 stakeholders assured provision of visual stimuli when requested to like charts, fruits, music costumes, balls as well as beanbags used in teaching adaptive skills. The findings are in agreement with Detrich and Keyworth (2018) who asserted that learning environment both physical including classroom and social involving teachers as well as learners, positively impact acquisition of adaptive skills by autistic learner for

integration [6].

On the other hand, findings in Table 1, postulated a negative relationship between conducive environment with visual stimuli ($r = -.123$, $p = .689$ $N=13$) and use of prompts ($r = -.296$, $p=.326$ $N=13$) an implication that there is no positive relationship between the parameters on adaptive skill acquisition. Nevertheless, the inverse relationship may be overcome by well stipulated guidelines on the best way to intertwine the parameters from planning to implementation of instruction delivery which may support acquisition of adaptive skills by autistic learners for survival. This is in agreement with Ganira and Odundo (2020) assertion that proper planning and instructional procedures facilitate conveyance of knowledge from teachers to autistic learners boosting acquisition of adaptive skills for positive living [8].

4.1.2. Response Recording and Adaptive Skill Acquisition

To actualize acquisition of adaptive skills, efficient learning based on abilities of autistic learner to respond to instruction may be accomplished. However, absence of learner's response deter teachers from acknowledging the shortcomings of the instructional methods employed in teaching. In the same vein, Ganira, Odundo, Gatumu and Muasya (2020) suggests that learner's response to instruction ought to be recorded immediately, record maintained and pausing in between instructions to allow recording [10]. Pearson Correlation coefficient established connection between the parameters to draw a conclusion regarding effect of response recording on acquisition of adaptive skills. The findings are illustrated in Table 2.

Response of autistic learner to instruction, enable the teacher to ascertain credibility of the instructional strategies towards supporting acquisition of adaptive skills for survival. Findings in Table 2. Exhibited a positive interconnection among parameters like immediate recording responses with Category of response ($r = .307$, $p=.308$, $N=13$) and Maintaining of response record ($r = .064$, $p=.835$, $N= 13$), this translates that accurate recording of response as either correct, incorrect or

prompted is influenced by recoding of response immediately which minimizes data dismissal from mind in case of delayed recording. Similarly keeping of response record for monitoring learning progress is premised on immediate recording of learners' responses thus decreasing chances of data loss due to memory lapses which may slow acquisition of adaptive skills for survival. Findings from stakeholders revealed that none supported recording and maintaining of

response data for it rested on teachers responsibility as the manager of all classroom activities however this hardly impact implementation of discrete learning negatively. As expounded by Odundo, Ganira and Ngaruiya (2018), learner's response to instruction gives feedback to the teacher from which amendments may be effected in instruction procedures if acquisition of adaptive skill is slow [18].

Table 2. Response recording Correlation coefficient.

		Recording learners responses	Category of response (Correct, incorrect, prompted)	Maintain instruction recordings
Recording responses immediately	Pearson Correlation	1	.307	.064
	Sig. (2-tailed)		.308	.835
	N	13	13	13
Category of response (Correct, incorrect, prompted responses)	Pearson Correlation	.307	1	.426
	Sig. (2-tailed)	.308		.147
	N	13	13	13
Maintain response recordings	Pearson Correlation	.064	.426	1
	Sig. (2-tailed)	.835	.147	
	N	13	13	13
pausing	Pearson Correlation	-.176	.000	.475
	Sig. (2-tailed)	.565	1.000	.101
	N	13	13	13

Similarly findings in Table 2 exhibited a positive relationship between category of response recorded with maintaining of record ($r=.426$, $p=.147$, $N=13$). This implies that record keeping was influenced by recording of response category by which it was easier for teachers to track learning progress of the learner and effect amendment where need be to support acquisition of adaptive skills for adaptability of autistic learner. The results were in agreement with Bondy and Tincani (2018); Wójcik, Eikeseth, Eldevik and Budzińska. (2020) affirmation that teacher's instruction trigger immediate response which is recorded and maintained to aid tracking of learning process to support acquisition of adaptive skills for integration in society [4, 23]. Further Table 2 findings revealed a negative relationship between recording of response and pausing ($r=-.176$, $p=.565$, $N=13$). Nonetheless the negative relationship may be subdued by adoption of procedures that govern pausing to allow response recording to support adaptive skill acquisition for positive engagement in society. In support of this Wahoski, (2015) argued that appropriate pausing after each step during

instruction, allows the teacher to give the learner an opportunity to attempt responding to instruction a step at a time as well as recording the responds category [22].

4.1.3. Repeated Instruction and Adaptive Skill Acquisition

Efficient repetition of instruction may increase learning capacity of autistic learner by boosting acquisition of adaptive skills for survival. On the other hand minimized repetition of instruction, may diminish acquisition of adaptive skills subjecting autistic learners to rejection and disintegration in the school and society. Parameters of instruction repetition which include consistency, regularity, varied environment and change in behavior may influence repetition of instruction impacting acquisition of adaptive skills for integration. Pearson Correlation coefficient established interrelationship between parameters drawing a conclusion regarding effect of instruction repetition on acquisition of adaptive skills for survival. Findings are as indicated in Table 3.

Table 3. Instruction Repetition Correlations coefficient.

		Consistency	regularity	varied environment
Consistency	Pearson Correlation	1	.307	.251
	Sig. (2-tailed)		.308	.408
	N	13	13	13
Regularity	Pearson Correlation	.307	1	.077
	Sig. (2-tailed)	.308		.803
	N	13	13	13
varied environment	Pearson Correlation	.251	.077	1
	Sig. (2-tailed)	.408	.803	
	N	13	13	13
behavior change	Pearson Correlation	.056	-.107	.197
	Sig. (2-tailed)	.855	.728	.518
	N	13	13	13

Every teacher delights in good academic performance of

learners which may insinuate acquisition of adaptive skills

for positive living in society. Autistic learners may be challenged in attaining good performance as a result of spectrum disorders which lowers acquisition of adaptive skills. However the menace may be overcome by repeated instruction which serves to improve the learning capacity that support acquisition of adaptive skills. Findings in Table 3. Postulated positive relationship between consistency with regularity ($r = .307$, $p = .308$ $N=13$) and varied environment ($r = .251$, $p = .408$ $N=13$). This implies that consistency influence—evenness or constant pattern of instruction repetition from which the learner familiarizes with the concepts thus acquiring the adaptive skills. Further consistency in instruction repetition in varied environments may boost acquisition in adaptive skills because learner is exposed to performing similar task in different contexts thus facilitating acquisition and generalization of adaptive skills for adaptability in society. Stakeholders assured the support accorded on repetition of instruction through continual presentation of challenges encountered by autistic learner at home, which thrilled teachers to teach concepts repeatedly until acquisition of adaptive skills is achieved. The findings are in agreement with Kahraman and Tekşen (2019) assertion that repetition of a task performance and in varied environment improves fluency thus improving acquisition of adaptive skills for survival [12].

Similarly Findings in Table 3 postulates a positive relationship between varied environment with regularity ($r = .077$, $p = .803$, $N=13$) and behavior change ($r = .197$, $p = .518$ $N=13$). This insinuates that evenness of instruction repetition and in varied environment may influence behavior change as a result of increased mastery which tend to minimize processes that bar acquisition of adaptive skills. The findings are in agreement with Cremone-Caira, Trier, Sanchez, Kohn, Gilbert and Faja (2020) argument that autistic learners have inhibiting processes such as distracted information processing and slowed response due to autism spectrum disorder which tend to minimize spontaneous acquisition of knowledge [5]. However with regularity in instruction repetition and in varied environment suppress the inhibiting processes increasing acquisition of adaptive skills for relationship formation by autistic learner. Further, Findings in Table 3 indicate a negative connection between regularity and behavior change a phenomenon that may be overpowered by ensuring variation in instructional procedures as well as environment and a notable change in behavior like ability to express ideas, participate in social activities like play and maintaining cleanliness is achieved indicating acquisition in adaptive skills for integration of autistic learner in community.

4.2. Relationship Between Discrete Learning, Acquisition and Adaptive Skills

Appropriate acquisition of adaptive skills is premised on implementation of discrete learning. This implies that a well-planned discrete learning complimented with quality policies on instructional resources, curriculum and stakeholders support increase acquisition of adaptive skill by autistic

learners. The descriptive statistics indicated effect of discrete learning on acquisition of adaptive skills by autistic learner as shown in Table 4.

Table 4. Effect of discrete learning on acquisition of adaptive skills.

Descriptive Statistics			
	Mean	Std. Deviation	N
Instruction Delivery	2.29	.548	13
Recording of Response	1.96	.466	13
Repeated Instruction	2.7115	.37978	13

Findings in Table 4, revealed the impact of discrete learning on acquisition of adaptive skills as indicated by mean and standard deviation. For-instance repeated instruction recorded $M = 2.71$, $N=13$ and std. deviation=.379, instructional delivery $M=2.29$, $N=13$ and std deviation=.548 while recording of response $M=1.96$, $N=13$ and std deviation=.466. From the findings in table 4, it is apparent that repeated instruction had greater effect while recording of responses had least effect on acquisition of adaptive skills as indicated by the Mean.

5. Conclusion

From the findings, the study concludes that there is a statistically significant effect of discrete learning on implementation, acquisition and adaptive skills. Instructional delivery, response recording and repeated instruction greatly impacted acquisition of adaptive skills by increased participation of autistic learner in learning activities. The study shows that instruction delivery which encompassed conducive environment, visual stimuli, trials building and prompting enhanced smooth conveyance of concepts to the learner resulting to acquisition of adaptive skills for survival. Correspondingly, response recording involved immediate recording, maintaining of record, monitoring and pausing, a phenomenon that enabled the teachers figure out the mastery level of autistic learner. Equivalently, through response recording the teacher is well placed to make adjustments on the instructional process to improve acquisition of adaptive skills by autistic learner for integration in the society. Further repeated instruction enabled teaching of a concept severally until mastery and generalization is attained leading to acquisition of adaptive skills by autistic learner for positive living in school and society.

6. Recommendations

- 1) The government may promote Policy orientation on implementation of discrete learning focusing on instructional strategies, materials and creation of conducive learning environment to maximize participation of autistic learner in learning process.
- 2) Presence of refresher courses to equip teachers with present-day knowledge on instructional delivery, response recording and instruction repetition to facilitate acquisition of adaptive skills by autistic learners.

- 3) Further research on interventions for adaptive skills acquisition.

References

- [1] Anyienda M. S. (2021). Effect of interactive approach instruction on standard six learners' achievement in reading comprehension in Primary Schools in Vihiga County, Kenya. University of Nairobi, Nairobi, Kenya. Retrieved from <http://erepository.uonbi.ac.ke/handle/11295/155894>.
- [2] Bekele. S., Odundo, A. P., Mwangi, K. J., & Ganira, K. L. (2022). Instructional Content and Quality of Business Studies Textbook in Secondary School in Kenya. *International Journal of Educational Technology and Learning*, 12 (1), 1–9. <https://doi.org/10.55217/101.v12i1.498>
- [3] Bhandari, P. (2022). Correlational Research | When & How to Use. Scribbr. Retrieved January 16, 2023, from <https://www.scribbr.com/methodology/correlational-research/chaining>. <https://www.iidc.indiana.edu/irca/articles/applied-behavior-analysis.html>
- [4] Bondy, A. H., & Tincani, M. (2018). Effects of response cards on students with autism spectrum disorder or intellectual disability. *Education and Training in Autism and Developmental Disabilities*, 53 (1), 59–72.
- [5] Cremona-Caira A, Trier K, Sanchez V, Kohn B, Gilbert R, & Faja S. (2020) Inhibition in developmental disorders: A comparison of inhibition profiles between children with autism spectrum disorder, attention-deficit/hyperactivity disorder, and comorbid symptom presentation. *Autism*. 2021 Jan; 25 (1): 227-243. doi: 10.1177/1362361320955107. PMID: 32972212; PMCID: PMC7854883.
- [6] Detrich, R J., & Keyworth, R. (2018). *Instructional Delivery*. Oakland, CA: The Wing Institute. Retrieved from <https://www.winginstitute.org/effective-instruction-delivery>.
- [7] Ganira, K. L., Paul, O. A., Ciumuari, G. J., & Juliet, M. N. (2019). Social studies curriculum and cooperation among preschool learners in Nairobi, County: Addressing effectiveness of instructional methods. *American journal of social sciences and humanities*, 4 (1),
- [8] Ganira, K. L. & Odundo. P. A. (2020). Influence of Pedagogical Content Knowledge on Teacher Trainee Professional Competency at University of Nairobi, Kenya. *American Journal of Education and Learning*. ISSN 2518-6647. DOI: 10.20448/804.5.1.1.12 Vol. 5 (1) pp 1-12.
- [9] Ganira, K. L. (2022). Adopting STEAM Development Strategies in Early Years Education in Nairobi City County, Kenya: Implication for 21st Century Skills. *International Journal of Research in STEM Education (IJRSE)*. ISSN 2721-2904 (online). Volume 4 Number 2 (2022): 135-150.
- [10] Ganira, K. L., Odundo, P. A., Gatumu, J. C., & Muasya, N. J. (2020). Stakeholders' Support for Social Studies Curriculum and Enhancement of Responsibility among Learners in Early Years Education Centres in Nairobi City County, Kenya. *Teacher Education and Curriculum Studies*. Vol. 5 (2) pp 30-37: ISSN: 2575-498X.
- [11] Gatuura, D. F., & Mugo, W. J. (2020). Teachers' preparedness in identification of appropriate instructional strategies for use with special needs pupils in regular pre-schools in Tharaka-Nithi County, Kenya. *European Journal of Education Studies*, [S.l.], v. 7, n. 11, nov. ISSN 25011111.
- [12] Kahraman, A. & Tekşen, C. (2019). Effectiveness of Oral Repeated Reading With Autistic Language Learners. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, (61), 223-234. Retrieved from <https://dergipark.org.tr/tr/pub/dpusbe/issue/47035/574272>
- [13] Karpın K. & Ai Mahmudatussa'adah. (2020). Student response-based learning: a strategy for improving student participation in learning. *Innovation of vocational technology education*, 16 (1): 42-52. Doi: 10.17509/invotec.v16i1.23512.
- [14] Kinuthia. D. S. (2017). Factors affecting acquisition of adaptive behavior skills among learners with intellectual disabilities in selected primary special schools and units in Thika Subcounty, Kiambu County, Kenya. Masters thesis, Kenyatta University.
- [15] Landøy, A.; Popa, D.; Repanovici, A. (2020). Teaching Learning Methods. In *Collaboration in Designing a Pedagogical Approach in Information Literacy*; Springer Texts in Education; Springer: Cham, Switzerland, [CrossRef] in Information Literacy, Springer Texts in Education, https://doi.org/10.1007/978-3-030-34258-6_10137
- [16] Mailo, E. Odundo P. A., & Ganira, K. L. (2022). Policies Guiding Pedagogy and Teacher of Business Studies Competency in Kajiado County, Kenya: Instructional Skills' Policy Discourse. *Global Journal of Educational Studies*, 8 (1), 1-15. doi: 10.5296/gjes.v8i1.
- [17] Odundo, P. A., & Ganira, K. L. (2022). Pathway to Participation: The Dilemma in Early Years Education Learning Environments in Kenya. *Journal La Edusci* ISSN 2721-0979 Print Online ISSN 2721-1258. VOL. 3 Issue 4 (136-148). DOI: 10.37899/Journalaeduciv3i4739.
- [18] Odundo, P. A., Ganira, K. L., & Ngaruiya, B. (2018). "Preparation and Management of Teaching Practice Process at University of Nairobi, Kenya: Appropriateness of Methods and Resources." *International Journal of Learning, Teaching and Educational Research*. Vol 17, No. 8, pp. 107-128.
- [19] Odundo, P. A., Kinyua, G., & Ganira, K. L. (2018). Adopting Value Creating Pedagogy and Problem Based learning in Kenya. *World Journal of Educational Research* Vol. 5 No. 3: pp 269-287.
- [20] Pratt, C. & Steward, L. (2020). Applied behavior analysis: The role of task analysis and chaining. <https://www.iidc.indiana.edu/irca/articles/applied-behaviour-analysis.html>.
- [21] Ugalde, L., Santiago-Garabieta, M., Villarejo-Carballido, B., & Puigvert, L. (2021). Impact of Interactive Learning Environments on Learning and Cognitive Development of Children with Special Educational Needs: A Literature Review. *Frontiers in psychology*, 12, 674033. <https://doi.org/10.3389/fpsyg.2021.674033>
- [22] Wahoski, J., 2015. Video Modelling: An Intervention for Autism. *Journal of Graduate Studies in Education*, 7 (1), pp. 54-57.
- [23] Wójcik M, Eikeseth S, Eldevik S, Budzińska A. (2020). Teaching children with autism to request items using audio scripts, interrupted chain procedure and sufficient exemplar training. *Behavioral Interventions*. 1–18. <https://doi.org/10.1002/bin.1761>