Memory improved achieved through training techniques research paper

Introduction

Memorization is a primary concern among many individuals, and many are in dire need of the memory improvement techniques in order to enhance their memorization. In order to critically analyze how effective the memory improvement training techniques are, it is vital to have an depth understanding of the differences between memory losses that occur suddenly and those the occur gradually such as memory loss associated with aging (Dingfelder, 2005). Various psychologists have proposed various training techniques that can help in the attainment of memory improvement (Kennedy, 2010). The prime concern of such techniques is their effectiveness in helping in memory improvement. This research topic examines whether memory can be improved through training techniques and exercises that are practiced on a regular basis. Basing on the gathered sources, there are training methods that help on the improvement of memory among children, young adults and aged adults included (Kennedy, 2010).

According to the some of the gathered sources, research has reported that strategic training improved the performance of both younger and older experimental groups who were in the immediate least recall and in the memory task. Recent studies have also demonstrated close relationships between working memory and children's scholastic attainment. In addition, older adults aged between 65 and 75 have reported memory improvement through training. This research paper primarily depends on secondary sources for empirical analysis of data. This implies that the research study will critically evaluate and analysis the research findings of other similar

studies in order to determines whether memory can be improved through the use of training techniques. All the secondary sources were based on quantitative studies in order to arrive to their conclusions. This paper research topic attempts to evaluate the effectiveness of training techniques in enhancing memorization. The research paper provides a critical evaluation of the memory improvement methodologies that have already been proposed in the identified sources.

Research Objective

The research aims at exploring if there is a relationship between memory loss and aging, and if memory improvement can be achieved through the use of training techniques.

Research Question

Can memory be improved through training techniques?

Literature review of Related Work

Memory problems are an increasing concern in the neuropsychological complains. As such, research has been intensified in order to devise effective training strategies that can be deployed in order to enhance memory performance. In a study dubbed Does strategic memory training improve the working memory performance of young and older adults? Conducted by Carretti et al (2007), they attempted to investigate the effect that strategic training has in improving the performance of younger and older adults, the memory aspects that the study considered were the immediate list-recall and the effect of the strategic training on the working memory. An important

aspect that the study took into account was the role of aging in memory improvement. Previous research studies have revealed that the capacity of the working memory significantly depends on the long-term memory resources, implying that skilled memorizers have the capability of encode information strategically as in the case of memorizing recently acquired information (Carretti et al, 2007).

Basically, this happens depending on the strategic generation of cues found in the working memory, which in turn play a significant role in the activation of retrieval structures found in the long term memory. The basic relationship in such a context is that a person uses prior knowledge to encode relationships in the long term memory, implying that incoming information can be retrieved in the course of its activation, by use of associations and elements that have been encoded in the long term memory. An inference to this model is that training encoding strategies can be used to enhance the capacity of information stored in the short term working memory (Carretti et al, 2007).

The limitations associated with the short term working memory are overlooked due to the fact that increased experience in a specific knowledge domain results to improved knowledge structures, which translates to enhanced retrieval strategies. Other studies have also revealed the long term knowledge plays a significant role in improving the performance of working memory tasks. An analogy to this concept is in real life cases, whereby there is improved performance when undertaking memory tasks that related to long term trained special training, for example doctors and

teachers. The principal argument is that working memory in relation to knowledge acquisition significantly entails the use of prior knowledge in order to enhance the performance of short term working memory tasks. This model also translates to the significant role that strategic training plays in improving the effectiveness of undertaking working memory tasks (Higbee, 2001). As a result, strategic training can be deployed effectively in attempt to help in memory improvement. The study conducted by Carretti et al (2007) reported a positive effect that training techniques have on the improvement of the short-term working memory. With a specific analysis of the training techniques, the study revealed that the rehearsal strategy benefitted more low span participants, while high span memory participants did not benefit significantly from the training techniques owing to the fact they are in possession of high attentional resources compared to low span individuals (Dingfelder, 2005). The research also evaluated the effect of training methodologies with regard to aging. A general conclusion that can be drawn from the study is that the working memory can be improved by use of training techniques.

The key issue of concern is whether memory can be enhanced using training strategies; this is due to the fact that previous studies on the same have reported different outcomes, posing the question whether memory improvement training strategies are effective across people of all ages, the specific memory types that such training techniques help in improvement, and the most effective training strategies in fostering the same. In a study dubbed a pilot investigation of effectiveness of a memory improvement

program on subjective and objective memory in healthy young adults: Directions for future use, conducted by Sullivan and Madden (2010) was investigating the effects of commercial training programs on memory improvement among young adults. The commercial training program that was being evaluated was the Memory power, which was conducted on a sample that comprised mainly of young adults. Previous studies relating to the same have revealed inconsistent results, possibly due to the fact that the memory types under investigation were not consistent (Sullivan and Madden, 2010).

In addition, the inconsistency in the results of similar studies can also be due to age group differences, some studies focused on older adults, while others focused on young adults; as a result, mixed resulted concerning the effect of commercial training program on subjective and objective memory. A significant flaw in the methodology of the research was the random allocation of the two memory groups, resulting no significant differences between the groups in terms of subjective memory functioning (Dingfelder, 2005). Another methodological flaw in the study is that it did not put into consideration the relationship that exists between long term memory and short-term memory tasks, making it difficult to draw a conclusion on the role that long term information acquisition plays in the fostering improved performance of short-term working memory tasks. Age differences in the sample population was not taken into account, as result, the findings can be said to more generalized rather than precise and specific to the effectiveness

of commercial training programs on memory improvement in specific age groups (Sullivan and Madden, 2010).

Another important aspect of memory improvement is the role that the working memory plays in the undertaking of complex memory processes such as reasoning and reading comprehension. This poses as a research challenge in the sense that it can be used in the evaluation of whether working memory training strategies can be effective in memory improvement over time. In another study conducted by Borella et al (2010) dubbed working memory training in older adults: Evidence of transfer and maintenance effects, attempted to investigate the efficiency of the Verbal working memory training program in older adults who were aged between 65 and 75 years. The study also evaluated the effectiveness of specific training benefits associated with the verbal working memory tasks and the transfer effects associated with the measures of visual spatial working memory, short-term memory and the memory processing speed. The methodological flaw in this study was that its sample comprised of only older adults, implying that discussion of the results were more generalized rather than precise (Borella et al, 2010). The findings of the study reported that the working memory training was effective in fostering short term memory improvement among the trained individuals. Post training and transfer benefits were reported in relation to short-term working memory. A significant discrepancy in the discussion of the results for the study is the fact that the findings of the study contrasted other results of similar studies carried on older adults, in the sense that there were no transfer effects

reported in working memory span tasks that are complex and tasks that had different memory contents (Borella et al, 2010).

A significant aspect of memory enhancement is the ability to remember names. A significant fraction of people have difficulties in attempt to remember names. In older adults, forgetting names is one of the most common problems associated with memorization. In addition, psychological studies have concluded that names are one of the most difficult entities to remember. Such problems have steered the need to develop models aimed at explanation of difficulty in remembering names and the various strategies that can be deployed in order to facilitate the remembrance of names. In an experiment conducted by Morris et al (2005) dubbed strategies for learning proper names: expanding retrieval practice, meaning and imagery, aimed at evaluating the efficiency of retrieval practice, meaning and imagery in recalling names reported that complex imagery and mnemonic did not have any significant improvements in name recalling. In addition, the experiments revealed that retrieval practice was a powerful technique in enhancing memory retrieval of names and respective learning (Morris et al, 2005).

The study emphasized on the effectiveness of specific training improvement techniques in name learning and recalling. The key strategies under studies were retrieval and semantic associations. An experiment comparing complex mnemonic imagery and retrieval practice revealed that retrieval practice is an effective name recalling strategies for random people in a people. In summary, expanding retrieval practice and meaning based associations are an effective strategy in the learning and memorizing of names. A

combination of both the strategies proved more effective in name retrieval and name teaching (Morris et al, 2005). An inference that can be made from the experiments is that training techniques can be deployed effectively in fostering memory performance with respect to name retrieval and name teaching (Morris et al, 2005).

There are close relationships that exist between the working memory and the scholastic attainment in school going children. As a result, various studies have been conducted in order to determine the training strategies that can be effectively used in the improvement of the working memory. A study carried out by St Clair-Thompson et al (2010) dubbed improving children's working memory and classroom performance revealed that the use of working memory training strategy was an effective approach to improving working memory tasks associated with the phonological loop and central executive components. In addition, the performance of tasks relating to instruction following and mental computations were significantly enhanced. An interference that can be made from this study is that working memory training techniques can be used to enhance the various elements of the working memory (St Clair-Thompson et al 2010).

It is arguably evident that the research findings reveal that memory training strategies can be used in improving memory performance. Most of the elements that make up the working memory can be improved by use of the training methodologies in order to enhance the overall memory performance. The following section is a research design that will be used to

further provide an analysis of the effectiveness of training techniques in improving memory performance.

Research Methodology and design

This research will base on quantitative data collected from the experiments in order to address the research question. The participants in the study will comprise of all age groups, which is children, young adults and older adults, with each age group comprising of twenty people, and an equal fraction of the males and females. The control group will also comprise of the same number of people, and equal composition of the males and females. The selection of the participants will be based on a questionnaire used to determine the physical and mental health of the participants.

The experimental tasks will be classified into groups, mainly the immediate recall task and the working memory task. The immediate recall task will involve presenting the participants with audio taped list of words at the rate of 2 seconds per word. Participants are supposed to remember as many words as they could at the end of the presentation. Multiple training sessions will be conducted on a regular basis in order to monitor the progress of the process. The working memory tasks, the participants will be represented by sets of word lists comprising of 20 words. The word list comprises of the various frequency words, and each set comprises of a unique characteristic that is makes it different from other word lists, such as a set may contain a list of automobiles only, animal species only and other classifications. There will be deviant lists in every three sets, in the sense that lists will contain one word that is not equivalent to the rest of the word in the list. The participant

is required to identify such like word lists during the presentation, immediately after such a list has been presented. The task will be carried regularly in order to monitor the progress of the experiment.

Conclusion

It is arguably evident that training techniques can be used to improve memory performance of people. Various elements that make up the working memory can be improved by consistent training. The rate of distribution across all the sample groups implies age loss is determined by aging, in the sense that the younger adults benefitted most from the training programs compared to the older adults. In children, working memory training strategies benefitted them most in terms of enhancing scholastic performance (Dingfelder, 2005).

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