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Relationship Between Socio-economic Status and New Word Learning

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Abstract

New word learning refers to the process of learning of novel words which are not in the vocabulary of the person and it varies as a function of many potent variables socio-economic status is one of the major variables believed to have a significant effect on new word learning. The aim of the current study to investigate if new word learning varies as a function of socio-economic status. 74 children (studying in 1st and 2nd grade) were recruited. Children were taken from two different schools and in addition to this the NIMH scale was also administered to elicit details regarding socio-economic status (SES). The NIMH and school data were used to categorize children into groups according to their SES. Thirty uncommon nouns were asked to be named by the participants. The starting point score for each participant was 0. The names were told to the participants and testing was repeated immediately, this phase was termed as training phase. The testing was also carried out after 3 days post training. Scores obtained on the third day was taken into consideration for statistical analysis as it would reflect new word learning. Mann Whitney U test was administered and the statistic revealed a significant difference between children belonging to higher and lower SES with children belonging to higher socio-economic status performing better. This difference could be because of the rehearsal strategies adapted by children or follow up with parents.

Keywords: New words, vocabulary, strata, fast mapping, socio-economic status

INTRODUCTION

Learning refers to the act of attaining and improving the knowledge that can be either self directed or influential, which can be done by studying, observing, performing, memorizing and experiencing. Learning by the self–directed mode is given more preference over the influential mode because the pre-attentional, attentional, acquisitive and cognitive skills or abilities are more powerful for this mode when compared to the influential mode. [1]. Although the influential mode of learning is put into existence or is the more apt mode in the natural educational scenario. Even the same is observed while mastering a skill, ability or artistry because an itinerary on the things to be learned, how to be learned and extend of being learned is clearly stated or informed. Learning is the process that plays a major role in facilitating, inspiring a person's capacity, potential and zeal to acquire knowledge [2].

New word learning is a related term, and it refers to the process of learning novel words which are not in the vocabulary of the person [3]. Thus, referring to the above-mentioned text the new word learning process will fall under the category of the influential mode of learning. The ability of learning novel words has been explored in children as well as adults. It has rarely been explored in clinical population as well. New word learning in children is carried out by making them learn words which are

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usually not acquainted by their age, non words, abstract words or words from the foreign languages [4]. These words can be taught in many such as concept-based, picture-based, audition-based, synonym or antonym-based and through various other methods. Researchers have explored many dimensions of new word learning and the factors enabling new word learning and the factors are divided into external and internal factors. Internal factors include motivation, goal, interest, attention, aptitude, attitude, speed, accuracy and guidance whereas the external factors include hereditary, status and physical environment. Here, to elaborate on the internal factors; these are the factors of the personal and cognitive interest which more or less has to be looked after or taken care of by the individual him/herself whereas the external factors are the factors which work in coordination with the internal factors and hold a major role in the learning and attainment of knowledge. Therefore, the status and the physical environment cumulatively termed as the socio–economic status which is one of the most influential factors for the learning process to be judged.

Both the factors play an equivalent role in quoting the efficacy of the learned word/skill/ability/art. Moreover, the level of effort required to retain the word and store it into the long-term memory depends upon the individuals and varies with the same [5, 6, 7]. This is the concept which is called as learning to learn. Learning to learn basically defines the strategy, way and process on how to learn a word. Second stage of this concept tells about the ability to retain it and arrange it in the lexicon on some basis or criteria. Final stage includes the cognitive part wherein the word/skill/ability/art is used in some other kind of context that is different from the context in which it was taught. This is the aspect that involves the major role and shows the possibility of correlation between the socio-economic status and the new word learning. The correlation can be found in terms level of stimulation, use of gadgets, knowledge to use internet (other sources such as books or newspapers) parental background, parental interaction and peer interaction when both the lower and the higher socio-economic status will be compared. These can be considered as the aspects to look into when a new word is being taught to the children and the mode or the means they use to retain it.

The purpose behind this study can be highlighted in many ways commencing from the acquiring knowledge about the extent to which the socio-economic status affects the efficacy of new word learning. Following, one can infer about the factors mentioned above (parental background, parental interaction etc) that fall under the socio-economic status [8, 9]. One can clearly relate the amount of exposure difference that higher and lower ends of the system will be having in terms of the environment and quality of stimulation. Moreover, speaking about the need of learning (or zeal for learning), it grossly depends upon the parents and teachers too, like the higher status parents would be willing or expecting their children to be highly knowledgeable and be in par with the new updates and happenings while this might not be the same scenario when it comes to the lower status families or parents. The definition of how to distinguish between the higher and lower socio-economic status has been mentioned below.

The relationship between new word learning and socio-economic status has been studied by quite a few researchers. An earlier attempt was made by a proponent [10]. where the ability to learn words in toddlers belonging to higher and lower strata of society was investigated. It was found that children belonging to higher socio-economic status had lower latencies when compared to children belonging lower socio-economic status. New word learning in lower and higher socio-economic status children was explored by Matlin (1997) and the author reported that the socio-economic factor was a major potential factor in deciding new word leaning. Contradictory findings were derived from another study [11]. where the researcher attributed new word learning ability to aptitude and intelligence of children rather than socio-economic status. No unified findings have been obtained in this line of research.

Need: India is a country with people belonging to different strata of society. It is difficult to generalise anything related to learning in regard to socio-economic status. The present study is an attempt to study new word learning in children belonging to lower and higher socio- economic status.

AIM AND OBJECTIVE

- *Aim:* To study new word leaning in children belonging to lower and higher socio-economic status.
- *Objectives:* To study the new word learning immediately after exposure and 3 days after exposure.

METHOD

Participant Details

A total of 80 children were considered for the study with a written consent from the principals of the respective schools. The children were recruited from two different schools. The first school referred to CBSE School with a relatively higher fee structure and another school with low fee structure. Following, the school with higher fee structure had the parental occupation of being doctors, engineers, chartered accountants, bank managers while the school with the lower fee structure had parental occupations like shopkeeper, driver, salesman, barber, small scale business. The children were studying in 1st and 2nd grade. Equal number of males and females were considered. In order to ensure that the participants belonged to different strata as assumed, NIMH socio-economic scale was administered on participants. 36 children from School 1 belonged to higher socio-economic group (termed as group 1 in future) while 38 children from the second school belonged to lower socio-economic group (group 2). These 74 children (balanced across the two grades) served as participants eventually. The rest 6 children were excluded from the study due to their absence on the day of testing. Naming task was administered on all the participants. All the participants were regular to school and were performing well academically (in teachers perspective).

Stimulus and Procedure

Prior to the administration of the naming task, a baseline assessment was carried out, where the participants were asked to name the given 30 pictures in English language (their L2) All the participants had a baseline score of 0. (Care was taken to ensure that infrequent pictures were considered from Class V). The children were given words like raspberry, handcuffs, coriander, forceps, witch, skiing, etc. The stimulus was made in a power point format with each slide having 1 picture (coloured) with the name of the item on it. Simultaneously, the audio for the same was put up in the slides (thrice in 30 seconds that is at the 5th, 15th and 25th second). Each slide was displayed for 30 seconds and then it would change automatically. The procedure was carried out for a total duration of three days. During the first day baseline testing and training was carried out. Once it was ensured that the participants did not know to name the picture, corrective feedback was given and the participants were asked the name immediately after training. Each correct response was given a score 1.

In order to verify if the participants had learnt the given word, testing phase was carried out after 3 days where the pictures were re-shown to the participants in a randomised order and the participants were encouraged to name the pictures again. The number of correct responses produced by group 1 and group 2 children was noted down.

RESULTS

Group 1 children secured a score of 21 on immediate naming (grade 1: 18 and grade 2: 24) while group 2 secured a score of 15 (grade 1: 12 and grade 2: 18) as shown in Figure 1. The mean scores were more for group 1 children when compared to group 2 children on immediate naming. The pronunciation errors made by made by children to repeat back the words was not taken into consideration, if the pronunciation was entirely different or distinct a score of 0 was given. The other errors made by children as in semantically related errors or naming in the undesired language was also considered.

After 3 days post-training, group 1 secured a score of 18 (grade 1: 16 and grade 2: 20) group 2 secured a score of 12 (grade 1: 10 and grade 2: 14) as shown in Figure 2. In new word learning studies, new word learning is determined by comparing the delayed naming score (after 3 days or 5 days based on the study) as the scores on immediate naming would reflect momentary learning.

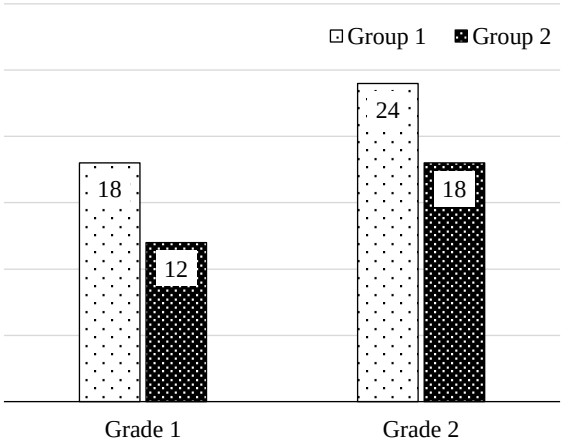

Figure 1. Performance of group 1 and group 2 children on immediate recall.

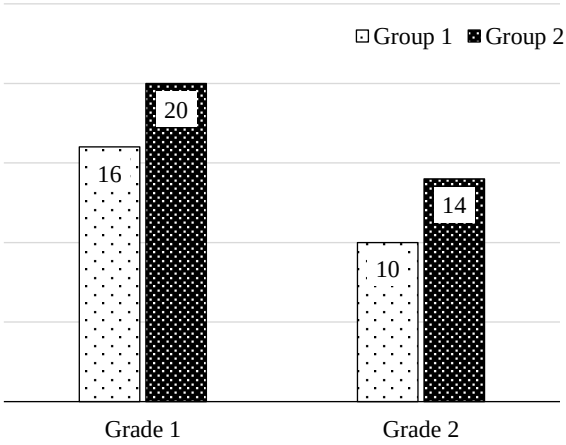

Figure 2. Performance of group 1 and group 2 children on delayed recall.

DISCUSSION

The range of responses that were given by the children were classified as follows semantic errors, pronunciation errors, translational equivalent responses and unrelated responses. Further, the semantic error was classified into category, member, feature and associated response. The pronunciation errors mean to be the response given in any other language (mostly L1) like hammer- sutke (in kannda),broom-jhatru (in hindi). The semantic errors relate through the meaning of the word while the pronunciation errors suggests issues with the pronunciation. Lastly, the unrelated responses shows no relation with the image or word shown in the slide.

Therefore, the responses that were given by the students from the children of higher socio-economic strata were mostly related to the similar category, associated response, feature or a member like for studs – shoes, handcuffs – jail, witch – magic and skiing – skating respectively. Least errors with respect to pronunciation errors and translational equivalent responses were noted. While still some responses were noted with no relation like bow – leaf.

The responses that were by the lower socio-economic strata were mostly related to the unrelated responses, pronunciation errors, translational equivalent responses like pinecone-peanut, stud-stid, pickle-dabba respectively. These responses were equivalent to the responses in the semantic error category.

Error analysis was also carried out for the 20 and 15 errors committed by the children. 35 % of the errors made by first grade children and 22% of the errors made by second grade children were in the form of no responses and this data was considered as nullified data points as they did not help in analyzing anything on how lexical items were arranged in the lexicon.

Children studying in first grade produced a total of 13% errors of unrelated errors, 11% of phonemically based errors, 35% of semantically based errors and 6% of translation equivalent responses which were viewed as errors. Most of the errors produced by children were semantically based errors. Analysis was further done for errors categorized as semantically based errors and it was observed that most of the errors belonged to the same lexical item as the target item. This depicted that the nature of arrangement can be taxonomic where words belonging to the same lexical category could be arranged together.

Similarly, error analysis was done for children studying in second grade, a total of 16% errors were neither semantically related nor phonemically related, a total of 12% were phonemically based errors (mainly because of the pronunciation errors), 51% of the errors were semantically related and 9% errors were transitionally related to the target item. Most of the errors made by children were semantic in nature which could say that the arrangement of words in the lexicon can be based on semantic

relationship. The trend remained the same for both 1st and 2nd grade children. The 51% errors designed as semantic based errors were analyzed further and it was found that the even children in second grade also used words which belonged to the same lexical category as the target (category member) as well used words which shared a common attribute. The inference drawn could be that the can be either taxonomic or thematic. The study can be done on children belonging to higher grade to know the trend in organization

In order to verify if there was any significant difference between the two groups (group 1 versus group 2) the delayed naming scores was taken into consideration. Mann Whitney U test was employed as the data did not abide by the properties of normal distribution; the scores differed from one participant to another participant. The Z score for grade 1 was 4.14 and the Z score for grade 2 was 3.88, the corresponding p values were highly significant for group 1 ($p<0.01$) and significant for group 2 ($p<0.05$). Semantically related errors were more in group 1. Group 2 participants sometimes produced the response in L1.

The aim of the study was successful in establishing a relationship between the socio-economic status and the new word learning. The strength of this study can be quoted in terms of the accuracy in measuring the range of responses and the frequency of responses given by the children from both the strata which aided in correlating. Moreover, there is least scope of any bias, thus, providing the study a transparent background. The study has no pre-set assumptions, and it is arranged in a systematic manner. The study though having basis of establishing relation between the socio-economic status and new word learning, also, tells about the lexicon arrangement of the children. Followed by that the study is easy to interpret and reproduce with any other range of students may be of higher grades like 3rd or 4th.

The limitations for the study include the time duration required to record the responses of the subjects or even inability to record it (absence of the subjects). Also, the role of the internal factors might affect the responses quality or even affect the training process (lack of attention, interest). The study requires more number of individuals to generalise the results.

The implications withdrawn from the study can be classified into two categories, firstly, the future prospects which will tell about the necessary change in both the internal and external factors so that both the strata can be in par with each other in terms of learning. This study provides insight of the amendments to be made in teachers and parental interaction and approach towards the children of both the strata. Elaborating on the previous statement that the higher socio-economic status parents should lesser the use of the gadgets and the internet while the lower socio-economic status parents to improve the interaction level and motivate their children to learn. Secondly, the role of this study in the present scenario will help the schools to focus on the methods of teaching and making the learning more innovative and improvise on their modes. Specifically, help the lower socio-economic status children with the same.

Lastly, the future research directions in this field can be done on the other standard children (3rd or 4th grade students) and even the modality of the stimulus presentation can be administered in terms of modality (audio, visual, audio-visual modes) which grasps the maximum learning capacity and extracts the best potential. Similar study can be replicated for the clinical population further divided into higher and lower strata. The changes that be done at the population level (mostly at the school level) can be in terms of the load of learning put upon the children and planning curriculum according to their brain capacity. Planning about the counselling the parents and the students on the importance of learning efficacy (especially, for the lower strata).

New word learning would vary as a function of many variables. The variables can be internal or external. Socio-economic status of children is a major external variable which would impact new word learning. The findings carried previously did not suggest uniform findings. The findings of the present

study showed that it can be potential variable deciding new word learning in younger children. Children belonging to higher socio-economic status would have rehearsed the words, or would asked the parents which would have brought the difference.

CONCLUSION

The aim was to investigate if new word learning varies as a function of socio-economic status. 74 children (Equal number of 1st and 2nd grade children) belonging to lower and higher socio-economic status as determined by the school and NIMH scale were considered. The subjects were asked to list thirty uncommon nouns. Baseline was 0, naming was carried out immediately and after 3 days after training. 3 days score was taken into consideration for statistical analysis. Children belonging to higher socio-economic status performed well when compared to lower socio-economic status children.

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