

Mathematics Remedial Program for Elementary Learners in a Cebu City, Philippines

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ABSTRACT: Remedial instruction can help battling students shore up their fundamental abilities, which help them make up for lost time to their classmates. This investigation surveyed the adequacy of the remedial mathematics program of the elementary department in a private higher education institution (HEI) in the Philippines. The documentary analysis, comparative study, and descriptive method were used as methods in determining the effectiveness of the Mathematics remediation program for the elementary learners. There were the 88 elementary learners from grades 1 to 6 who were recommended by their Mathematics teachers to engage in remediation classes as they have achieved final Mathematics grades 78 and below in the previous academic year. It was conducted in one of the private HEIs in Cebu City, Philippines. The findings reveal a positive relationship between the previous and the current grade levels' Mathematics grades of pupils who have attended the remediation sessions. The remediation sessions may have brought positive effects on the pupils' interest in an attitude on their Mathematics lessons. However, the findings also showed that the remediation sessions were not structured as part of the Department's offerings to provide for lessons' enhancement and remediation for pupils with low achievement levels. It is recommended that the proposed remedial program be implemented and monitored as an offshoot of this study.

Keywords -remedial program, mathematics, elementary learners

I. INTRODUCTION

In the teaching-learning sequence, evaluation is the final element. Learning should result in an overt change in behavior in terms of knowledge or skills, attitude or value. This change should be both visible and measurable. At the end of the period of instruction, teachers want to know the extent of learning and how well learning was achieved. Meaningful learning is what the school wants to determine through a systematic and continuing process of evaluation of instruction.

The purpose of the evaluation of learning outcomes in school from a learner's perspective is that teachers would like to be assured that the learner has mastered the lesson or unit and that the student is ready to tackle the next one. If that is not the case, then teachers can give individual students some form of remediation, and if it is the majority of the class who has not met a criterion of mastery, some form of re-teaching has to be done.

Tutorial instruction and instructional reinforcement to be the first two out of the nineteen variables, which have a significant effect on student achievement. Of the basic and traditional methods, practice and drill is a method, which is employed by teachers for those students who lack basic knowledge or skills of the academic subject matter before asking them to move on to other tasks or transfer their learning to a new situation. Thorndike's law of exercise, which states that the more often a stimulus-response connection is made, the stronger it becomes and Skinner's finding that reinforcement of a response increases the likelihood of its occurrence both provide some basis for the old maxim that practice makes perfect. The practice is deemed essential when the learner makes mistakes and before advancing to another level of difficulty.

Students differ in intellectual abilities, dispositions, and interests. Some students learn readily and usually understand what they are taught, while others are not quick to catch on and need review and re-teaching. If some students have trouble understanding, the teacher can diagnose the trouble and provide appropriate remedial instruction. A teacher should not feel ineffective if some students fail to understand what he or she is teaching the first time a topic is presented. Such students should be regarded as challenges and their temporary lack of understanding as a problem to be solved. A teacher is expected to treat both those who want help and those who do not, and he/she has to live the lack of success. The pupils manifested low numeracy achievement levels, except for a few irregulars and non-structured healing sessions when feasible, were not provided any further assistance to improve their performance in math. However, the pupils' parents were informed and requested to provide for the needed assistance.

A significant number of elementary pupils have shown low numeracy skills achievement levels to have failed or achieved borderline final grades in math. Over one-third of all the elementary pupils have shown below average performance in mathematics over the last three years. However, the pupils of the same cohort showed inconsistent math performance levels which depend on the math teacher assigned to a grade level. Of the pupils who manifested to have low numeracy skills achievement levels within the period considered, many transferred to other schools. Almost one-fifth of the pupils with low numeracy skills achievement levels were determined to have math anxiety. However, a significant number of other pupils were also found to have moderate to severe math anxiety levels.

The pupils considered to have often experienced the situations, which support the development of their math skills and positive attitudes towards math lessons, and related situations. They also perceived that they are provided moderate support by their math teachers, parents, and friends on their math lessons, the needs for the learning of this subject in related situations and all forms of support, which could generally contribute, to positive results and feelings of the pupils on their math and other subjects.

Thus, as an offshoot of the recommendations of the said study, the University has been offering remedial classes in Mathematics. The classes were conducted in the regular school year, and this researcher is one of the four teachers assigned to handle the said Mathematics remediation classes.

II. RELATED LITERATURE

Diagnostic evaluation attempts to discover the causes of students' learning problems. If a student fails in a particular subject or is unable to learn necessary skills or content, diagnosis of the cause of the failure may point to ways to remedy it. According to Perin (2006), proficiency has not been demonstrated; remedial instruction aimed directly at those deficiencies can be instituted. Diagnostic evaluation can provide the kind of information that will make it possible to overcome failure. Recent researches have provided us with a great deal of information on how to deliver remediation effectively.

Of specific note were discoveries concerning the significance of setting up clear-cut goals and objectives for remedial courses, the emphasis of mastery learning as a component of effective remedial instruction, the utilization of an assortment of showing strategies and the consideration of a substantial guiding segment in the structure of remedial education. A centralized program provides remedial courses, and evaluation of the remedial program must be done in a regular and systematic basis (Gysbers & Henderson, 2014; Ehri et al., 2001). Fine et al. (2009) found out that students in the remedial courses were likely successful if the remedial courses are provided with computer-aided instruction. Boylan and Saxon (1999) say that by integrating classroom and laboratory instruction was associated with student success in remedial classes. Bastedo and Gumpert (2003), remedial courses were most effective when the consistency of academic standards was insured.

Understanding the objectives of a specific course and knowing precisely what the instructor anticipates that understudies should achieve encouraged the learning of under arranged understudies. Besides, the investigation of Salas and Cannon-Bowers (2001) demonstrated that the particular objectives and goals likewise encouraged the foundation of a clear course structure, another segment of fruitful remediation.

If a school is to reach its educational objectives, each teacher must recognize and understand the complex aspects of behavioral changes. For a student to be developed as a potential achiever, schools must provide the most effective sequence of experiences that will bring about behavior consonant with the abilities of the individual. Because growth patterns differ among individuals, causing various degrees of maturity at the same age, and because a developmental sequence in behavior is necessary, the teacher must determine where students stand in this sequence and how they may best achieve their full potential.

In helping students, the teacher must determine the stages of their development and their peculiar learning difficulties. This is an educational diagnosis. Some years ago, the educational diagnosis was confined for the most part to academic knowledge and skills (Driscoll & Driscoll, 2005); but its scope has kept pace with the modern concept of education, which emphasizes all aspects of development. Thus, the development of the nonintellectual aspects students' personalities is as much the legitimate concern of teachers as is academic

knowledge and skills (Zaman, 2010; Burden, 2008). Indeed, active learning cannot be divorced from learning knowledge and skills.

Remediation is a possibility only when teachers understand the bases of student difficulties seeing specific needs, and react to meet them (Ottenbreit-Leftwich et al., 2010; Brownell et al., 2006; Hyland, 2002). Good teaching implies several things: first, that we meet children at own heir levels of achievement and start from there; second, that we know something of the experiences had a problem they have had in reaching those levels; and third, that we are aware of how to present learning relates to future school experiences. Children who have suffered the agonies of frustration and humiliation in arithmetic classes will present a more problem of remediation than those of remediation than who do not understand long division.

According to Rowntree (2015), Diagnostic evaluation is equally useful as formative and summative evaluations. Diagnostic evaluation attempts to carefully analyze the course of learning problems so that proper remediation can be applied (Sheridan et al., 2006; Grubb, 2001). It is aimed to determine the best possible instructional situation for students in terms of their present learning status. Teachers should realize that the members of the group they are teaching do not have the same abilities (De Jong & Harper, 2005; Hiebert et al., 2002). Some of them are not growing well scholastically, and causes must be found, and remedies applied. If a school is to reach its educational objectives, each teacher must recognize and understand the complex aspects of behavioral changes. The teacher sees each within the group as having different problems and that he or she must determine the stages of their development and their peculiar learning difficulties.

In addition to recognizing what children need to learn, teachers must also determine how they can learn. Remedial classes should be based on diagnosis with consistent follow-through. The first step in the diagnosis of learning difficulties is to ascertain the strengths and weaknesses of the student (Geurts et al., 2004; Dunn et al., 2002). Underlying causes of the difficulty should mostly or be eliminated before remedial instruction begins. According to Lovett et al. (2008) that the remedial class teacher must have a good understanding of the underlying, principles in the conduct of remedial classes. To effect remediation, a thorough diagnosis must be made.

Remediation is possible only when the teachers understand the bases of student difficulties (Stronge, 2018; Powell et al., 2013). The first step in the diagnosis of learning difficulties is to ascertain the strengths and weaknesses of the student (Wilkinson, 2016; Boyle, 2005). The underlying causes of the difficulty should be determined and should mostly or be eliminated before remedial instructions begin.

Emotionally disturbed students dissipate their energy before they can apply it. It is difficult to determine whether emotional difficulties are causing learning difficulties or vice-versa (Kauffman et al., 2007; Walker et al., 2000). Learning problems can at times be a cause or effect learning difficulties. Indeed, a student may become an outstanding achiever to compensate for emotional problems. However, too often children with emotional disturbances find themselves caught in a vicious cycle, anxious over lack of achievement, and performing poorly because of emotional disturbances.

Stated, emotional problems manifested by high school students will fall into broad categories: adjustment problems and behavioral problems. Adjustment problems are usually situationally induced and relatively amenable to intervention. They occur in response to specific stress either family or community life or from events in the living environment. Behavioral problems are well-ingrained maladaptive patterns (Gifford, 2013). Other symptoms include withdrawal, inability to concentrate, lack of attention, inability to form relationships, fluctuating moods, anger, the flatness of effect, and the like will be observed in these students.

Repeated lack of success and intense periods of emotional stress might be a cause of incapability to attend to essential explanations in class. If the teacher is not aware of such factor, she may entertain wrong conjectures, and restorative treatment may not be active.

No therapeutic technique will be successful unless students can see the relationship between the purposes of technique and their own needs. Many failing students have acute feelings of inadequacy and feel they are unable to succeed, that they are different. Some of them withdraw and refuse to try: others rationalize by thinking that success is unimportant and that whatever they might learn will never be used.

The teacher is the catalyst for changing these attitudes. Such students want to be understood. Many of them have been lectured, threatened, and rejected until often the first task is to help them rebuild self-confidence. Good teachers let students know that they are liked and appreciated: above all, teachers are optimistic and stay that way during the students' "down" as well as their "ups." By accepting students, teachers help them to build a sense of security that is vital for active learning.

Since students develop confidence when they experience success, it is essential that teachers know their strengths as well as their weakness. The teacher must build on those strengths, starting at the child's level of achievement. It helps if the student's first success is dramatized. Presenting progress concretely is useful, particularly for younger children. Charts, graphs, and pictures can all be used successfully, though the device must be attuned to the maturity of the students. A device that lets them see their improvement works well. When they compete with themselves, they can improve their records, and this proves highly motivating.

To sustain motivation, the teacher should stimulate interest in the remedial program and monotony should be avoided at all costs. Different approaches prevent mental fatigue, and so do materials with high motivation value. If students can help plan their program by selecting materials and procedures, their involvement will often generate a permanent interest essential to the development of their independence.

Students' interest may wane if forced into remedial activity. Some students honestly feel that their skills are adequate despite painful indications to the contrary. Sometimes allowing them to take a standardized test and helping them analyze the results produces the desired effect. Ingenious teachers use many methods to help a student want to improve, and social recognition is not the least of them. Most students find it rewarding to demonstrate progress to their peers and parents. Above all, remedial activities should not be scheduled when they conflict with other things the student would like to do. To be required to work a sheaf of arithmetic exercises while a big game is going on is hardly motivating.

Boylan and Saxon (1999) also emphasized mastery learning as a component of effective remedial instruction. The majority of the ways to deal with dominance learning used small units of guidance and continuous testing expected understudies to have the capacity to ace the material in one unit before advancing to the following unit. This accentuation on authority was helpful to understudies in remedial courses since it gave ordinary fortification of ideas through testing. An accentuation on authority expected understudies to build up the essential learning for accomplishment in a given course and to show this information through testing. Understudies presented to dominance learning systems in remedial courses were bound to pass these courses, acquire higher evaluations, and be held than understudies whose healing courses were shown utilizing increasingly customary strategies.

The utilization of a wide range of encouraging techniques was likewise suggested in the early understudies of healing guidance. Understudies in remedial courses have been addressed in the past absent much impact (Barnes and Tynan, 2007; Stecker et al., 2005). If conventional training strategies had worked for these understudies, they would not be taking remedial courses. Once more, these early discoveries have additionally been approved through later research. Wright (2011) found that understudies in remedial courses were probably going to be progressively fruitful when an assortment of instructional techniques was utilized.

The effect of mentoring on healing understudies has been generally bantered in writing. Right off the bat in investigations of remediation proposed that coaching was a significant segment of active projects for under arranged understudies (Laskey and Hetzel, 2011). Be that as it may, Ringstaff and Kelley (2002) have contended that examination discoveries on the effect of coaching on under arranged understudies have been blended with no outcomes being found.

The viability of coaching is firmly impacted by the quality and the measure of preparing gotten by guides. This is especially evident when the subjects of coaching are under arranged understudies. Hawk et al. (2001) found that there was no distinction in the execution of understudies partaking in therapeutic projects whether they got coaching or not, except if the mentoring program incorporated a trustworthy guide preparing segment. Mentors will be ineffectual except if they can reliably and conveniently apply systems proper to every understudy's circumstance (Boud et al., 2013; Beaumont et al., 2011; Justice et al., 2009). This must be cultivated through preparing.

Swail (2003) contended that a foundation-wide pledge to therapeutic training was a critical factor in the accomplishment of a school's program for remediation. A foundation-wide pledge to remediation was reflected through authoritative help for remediation, proper distribution of assets for remediation, and institutional acknowledgment of remediation as a standard movement for the school. Hayes (2008) found that medicinal projects incorporated into the scholarly standard of the organization had higher pass rates in remedial courses and were more effective in holding understudies than projects that were not along these lines coordinated.

Phipps (1998) found that healing courses were best when reasonable endeavors were made to protect consistency between the leave benchmarks for remediation and the passage models for educational modules courses. In any case, found that a shockingly expansive number of foundations endeavored to decide whether what was educated in remedial courses were really what was necessary for understudies to prevail in educational modules courses. At organizations where such consistency was guaranteed, understudies passing remedial courses had a high probability of passing later educational modules courses. Newmann et al. (2001) also argued for this consistency in their recent recommendations for improving the performance of the school's remedial programs.

These works of literature from other parts of the world have contributed to the formulation of the study, which deemed necessary in the conduct of the study.

III. OBJECTIVES OF THE STUDY

This study assessed the effectiveness of the Mathematics Remedial Program among elementary learners in a university, Cebu City, Philippines. It answered the: 1) Mean mathematics grade of elementary learners; and 2) Relationship between the previous and the current grades in mathematics.

IV. METHODOLOGY

The study utilized documentary analysis, comparative study and descriptive method were used as methods in determining the effectiveness of the Mathematics remediation program for the elementary learners. The subjects of this study were the 88 elementary learners from grades 1 to 6 who were recommended by their Mathematics teachers to engage in remediation classes as they have achieved final Mathematics grades 78 and below in the previous academic year.

The study was conducted in one of the private HEIs in Cebu City, Philippines. The school offers primary and higher education and is continuously recognized in its various achievements. It continues to provide quality education in a healthy school environment, which is geared towards the total development of every pupil. Among its other objectives intended to cater to the educational needs of every child, the department seeks to provide educational opportunities to enrich its learners through quality instructional materials and quality of learning experience to cater to the particular needs of the gifted, slow, average and underachievers, and pupils with behavioral problems.

Stage 1 of the investigation concentrated on the development of the research design and on obtaining information on the varying degrees of low numeracy skills achievement possible causes, and the remediation interventions, which could be afforded to the pupils who have low numeracy skills achievement levels. Phase 2 of the study was devoted to the conduct of the data gathering, which included the perusal of the pupils' mathematics grades in the previous year levels and the first grading after the request of the utilization of the said grades was approved by the university president. Phase 3 concentrated on the organization of data gathered, the pupils' grades before and after/during the conduct of remediation sessions which were the pupils' grades described and analyzed using the test of two sample means, weighted mean, and t-test for correlation, and Pearson r.

V. RESULTS AND DISCUSSIONS

They are learning remediation sessions for elementary learners with low performing achievement levels in mathematics. The sessions are done every Fridays for an hour in the morning. The teachers use conventional approaches in the said sessions considering that they did not have any specialized training on the conduct of remediation. The pupils' performance is not evaluated or monitored. However, they are rated based on their attendance and session participation, which shall be considered as club ratings written in the pupils' report cards.

As an objective of guidance, scientific capability gives a superior method to consider mathematics learning than smaller perspectives that forget key highlights of knowing and have the capacity to do mathematics.

Table 1. Mean Mathematics Grades in Remediation

Grade Level	Frequency	Mean of Mathematics Grades	
		Previous Year	Current Year
II	2	76.765	77.310
III	10	75.793	76.319
IV	13	74.793	76.370
V	18	74.917	77.297
VI	45	75.595	76.650
Grand Mean :		75.387	76.719

From Table 1, it could be gleaned that they were those who achieved Mathematics grades of 78 and below in the previous school year. However, the other 16 pupils volunteered to join or were advised by their parents to attend the remediation sessions. In the previous and the current year, the pupils achieved low Math grades of 75.387 and 76.719, respectively.

Too many learners consider that mathematics is virtually a phenomenon of nature. These data imply that the school must provide a reasonable basis for elementary learners for ease of understanding of the mathematical concepts. The widespread availability of technological tools help learners prepare for computation means that people are less dependent on their powers of computation.

Too few elementary pupils in the Philippines leave elementary with adequate mathematical knowledge, skill, and confidence for anyone to be satisfied that all is well in school mathematics. Moreover, there are studies conducted in the past are not well represented among those who succeed in learning mathematics. Widespread failure to learn mathematics limits individual possibilities and hampers national growth. The researchers have convinced that the school should adopt change because changing such needs may help every child the opportunity and support necessary to become proficient in mathematics.

According to Ediger (2010) that by communicating relevant concepts, the mathematics teacher may benefit in upgrading the curriculum. The pupil achievement will increase as a result of the teacher's increased knowledge about the teaching of mathematics.

The study of Meijnen et al. (2003) reveals that there is a considerable extent of change at the class level. Guidance qualities and long periods of experience by the instructors appeared to be significant.

Table 2. Mathematical Performance of Students

	Previous Grade (X)	Recent Grade (Y)
Mean	75.387	76.719
Variance	2.353	8.599
Observations	88	88
Pearson Correlation	0.332	
Strength	Moderate correlation	
df	87	
t-value	4.426	
Critical Value	2.370	
Significance	Significant	
Result	Ho rejected	

From the details of the findings presented in the table, it could be inferred that the coefficient of correlation r is 0.3317, which indicates a positive relationship between the previous, and the current grade levels' Mathematics grades of pupils who have attended the remediation sessions. The computed value of t , which is 4.426, considering the value of r , is higher than the tabular value of 2.370 at 0.01 level of significance. Thus, the null hypothesis is rejected between the previous year's and the current year's Mathematics grades. The remediation sessions may have brought positive effects on the pupils' interest in an attitude on their Mathematics lessons.

According to Bull (2009) that appropriate remedial strategies may require pedagogical, administrative and psychological methods to ensure that the cause and effect of maths anxiety are targeted. Introducing maths- anxiety evaluation to formative testing and on-going reflective practice will raise awareness of the associated risk to patient safety, highlight the importance of maths confidence over surprise pass marks, and stimulate strategy development for monitoring and managing maths anxiety beyond vocational training into professional practice.

The study of Bahr (2008) find out that the two groups of students experience comparable outcomes, which indicates that remedial math programs are highly effective at resolving skill deficiencies.

VI. CONCLUSION

In light of the discoveries of the examination, it is concluded that a positive relationship exists on the grades of elementary learners. The remediation sessions may have brought positive effects on the pupils' interest in an attitude on their Mathematics lessons. However, the findings also showed that the remediation sessions were not structured as part of the Department's offerings to provide for lessons' enhancement and remediation for pupils with low achievement levels as the current remediation sessions are offered as a one-hour per week club activity.

VII. RECOMMENDATIONS

The researchers recommend that the Elementary Department offer a Remedial Program in Mathematics, and for other subjects to provide for the needed remediation sessions for pupils with low achievement levels not as a club activity but as a support program. Also, it is recommended that the proposed Remedial Program may be considered for implementation and monitoring.

REFERENCES

- [1] Bahr, P. R. (2008). Does mathematics remediation work?: A comparative analysis of academic attainment among community college students. *Research in Higher Education*, 49(5), 420-450. Retrieved from <http://bit.ly/2WspYw>
- [2] Barnes, C., & Tynan, B. (2007). The adventures of Miranda in the brave new world: Learning in a Web 2.0 millennium. Retrieved from <http://bit.ly/2WxT1AF>

- [3] Bastedo, M. N., & Gumpert, P. J. (2003). Access to what? Mission differentiation and academic stratification in US public higher education. *Higher Education*, 46(3), 341-359. Retrieved from <http://bit.ly/2UTiCIT>
- [4] Beaumont, C., O'Doherty, M., & Shannon, L. (2011). Reconceptualising assessment feedback: A key to improving student learning?. *Studies in Higher Education*, 36(6), 671-687. Retrieved from <http://bit.ly/2VgMz4r>
- [5] Boylan, H. R., & Saxon, D. P. (1999). What works in remediation: Lessons from 30 years of research. Unpublished report. Retrieved from <http://bit.ly/2vEIA3c>
- [6] Boud, D., Lawson, R., & Thompson, D. G. (2013). Does student engagement in self-assessment calibrate their judgement over time?. *Assessment & Evaluation in Higher Education*, 38(8), 941-956. Retrieved from <http://bit.ly/2V3vLss>
- [7] Boyle, R. A. (2005). Law students with attention deficit disorder: How to reach them, how to teach them. *J. Marshall L. Rev.*, 39, 349. Retrieved from <http://bit.ly/2J1jVxr>
- [8] Brownell, M. T., Adams, A., Sindelar, P., Waldron, N., & Vanhover, S. (2006). Learning from collaboration: The role of teacher qualities. *Exceptional Children*, 72(2), 169-185. Retrieved from <http://bit.ly/2WshS8Z>
- [9] Bull, H. (2009). Identifying maths anxiety in student nurses and focusing remedial work. *Journal of Further and Higher Education*, 33(1), 71-81. Retrieved from <http://bit.ly/2PRMCNV>
- [10] Burden, P. (2008). Does the use of end of semester evaluation forms represent teachers' views of teaching in a tertiary education context in Japan?. *Teaching and Teacher Education*, 24(6), 1463-1475. Retrieved from <http://bit.ly/2IYVZe3>
- [11] De Jong, E. J., & Harper, C. A. (2005). Preparing mainstream teachers for English-language learners: Is being a good teacher good enough?. *Teacher Education Quarterly*, 32(2), 101-124. Retrieved from <http://bit.ly/2YbT6KB>
- [12] Driscoll, M. P., & Driscoll, M. P. (2005). *Psychology of Learning for Instruction*. Retrieved from <http://bit.ly/2H0Tswr>
- [13] Dunn, R., Beaudry, J. S., & Klavas, A. (2002). Survey of research on learning styles. *California Journal of Science Education*, 2(2), 75-98. Retrieved from <http://bit.ly/2vEa8Vg>
- [14] Ediger, M. (2010). *Teaching mathematics in elementary schools*. Discovery Publishing House. Retrieved from <http://bit.ly/2JpVgSu>
- [15] Ehri, L. C., Nunes, S. R., Stahl, S. A., & Willows, D. M. (2001). Systematic phonics instruction helps students learn to read: Evidence from the National Reading Panel's meta-analysis. *Review of educational research*, 71(3), 393-447. Retrieved from <http://bit.ly/2Wn2oCP>
- [16] Fine, A., Duggan, M., & Braddy, L. (2009). Removing remediation requirements: Effectiveness of intervention programs. *Primus*, 19(5), 433-446. Retrieved from <http://bit.ly/2JeR0Ft>
- [17] Geurts, H. M., Verté, S., Oosterlaan, J., Roeyers, H., & Sergeant, J. A. (2004). How specific are executive functioning deficits in attention deficit hyperactivity disorder and autism?. *Journal of Child Psychology and Psychiatry*, 45(4), 836-854. Retrieved from <http://bit.ly/2VQ8oqE>
- [18] Gifford, L. S. (2013). The mature organism model. *Whiplash—science and management: Fear, avoidance beliefs and behaviour*. *Topical Issues in Pain*, 1, 45-56. Retrieved from <http://bit.ly/302bvem>
- [19] Grubb, W. N. (2001). From black box to Pandora's box: Evaluating remedial/developmental education. Retrieved from <https://eric.ed.gov/?id=ED453893>
- [20] Gysbers, N. C., & Henderson, P. (2014). *Developing and managing your school guidance and counseling program*. John Wiley & Sons. Retrieved from <http://bit.ly/2JcYOru>
- [21] Hayes, M. J. (2008). Cultural identity and the social adjustment and academic adjustment of African American college students. University of Hartford. Retrieved from <http://bit.ly/2ZWafK5>
- [22] Hiebert, J., Gallimore, R., & Stigler, J. W. (2002). A knowledge base for the teaching profession: What would it look like and how can we get one?. *Educational Researcher*, 31(5), 3-15. Retrieved from <http://bit.ly/2ZUoILX>
- [23] Hock, M. F., Pulvers, K. A., Deshler, D. D., & Schumaker, J. B. (2001). The effects of an after-school tutoring program on the academic performance of at-risk students and students with LD. *Remedial and Special Education*, 22(3), 172-186. Retrieved from <http://bit.ly/2JjMaqI>
- [24] Hyland, K. (2002). Specificity revisited: How far should we go now?. *English for specific purposes*, 21(4), 385-395. Retrieved from <http://bit.ly/2DLE1ro>
- [25] Justice, C., Rice, J., Roy, D., Hudspith, B., & Jenkins, H. (2009). Inquiry-based learning in higher education: Administrators' perspectives on integrating inquiry pedagogy into the curriculum. *Higher Education*, 58(6), 841. Retrieved from <http://bit.ly/2H1RNXB>

- [26] Kauffman, J. M., Mock, D. R., & Simpson, R. L. (2007). Problems related to underservice of students with emotional or behavioral disorders. *Behavioral Disorders*, 33(1), 43. Retrieved from <http://bit.ly/2ZY1VJF>
- [27] Laskey, M. L., & Hetzel, C. J. (2011). Investigating factors related to retention of at-risk college students. *Learning Assistance Review*, 16(1), 31-43. Retrieved from <http://bit.ly/2vCqkXI>
- [28] Lovett, M. W., Lacerenza, L., De Palma, M., Benson, N. J., Steinbach, K. A., & Frijters, J. C. (2008). Preparing teachers to remediate reading disabilities in high school: What is needed for effective professional development?. *Teaching and Teacher Education*, 24(4), 1083-1097. Retrieved from <http://bit.ly/2LsggL6>
- [29] Meijnen, G. W., Lagerweij, N. W., & de Jong, P. F. (2003). Instruction characteristics and cognitive achievement of young children in elementary schools. *School Effectiveness and School Improvement*, 14(2), 159-187. Retrieved from <http://bit.ly/2VODnDC>
- [30] Newmann, F. M., Smith, B., Allensworth, E., & Bryk, A. S. (2001). Instructional program coherence: What it is and why it should guide school improvement policy. *Educational evaluation and policy analysis*, 23(4), 297-321. Retrieved from <http://bit.ly/2PNdzCs>
- [31] Ottenbreit-Leftwich, A. T., Glazewski, K. D., Newby, T. J., & Ertmer, P. A. (2010). Teacher value beliefs associated with using technology: Addressing professional and student needs. *Computers & Education*, 55(3), 1321-1335. Retrieved from <http://bit.ly/2vB7ZKc>
- [32] Perin, D. (2006). Can community colleges protect both access and standards? The problem of remediation. *Teachers College Record*, 108(3), 339. Retrieved from <http://bit.ly/2WlJeSN>
- [33] Phipps, R. (1998). College Remediation: What it is, what it costs, what's at stake. Retrieved from <http://bit.ly/2LpJxGr>
- [34] Powell, S. R., Fuchs, L. S., & Fuchs, D. (2013). Reaching the mountaintop: Addressing the common core standards in mathematics for students with mathematics difficulties. *Learning Disabilities Research & Practice*, 28(1), 38-48. Retrieved from <http://bit.ly/2UYOyFq>
- [35] Ringstaff, C., & Kelley, L. (2002). The learning return on our educational technology investment: A review of findings from research. Retrieved from <http://bit.ly/2PNufd6>
- [36] Rowntree, D. (2015). *Assessing students: How shall we know them?*. Routledge. Retrieved from <http://bit.ly/2WrfTkY>
- [37] Salas, E., & Cannon-Bowers, J. A. (2001). The science of training: A decade of progress. *Annual review of psychology*, 52(1), 471-499. Retrieved from <http://bit.ly/2VaHF8R>
- [38] Sheridan, K., Zinchenko, E., & Gardner, H. (2006). Neuroethics in education. *Neuroethics: Defining the issues in theory, practice, and policy*, 265-276. Retrieved from <http://bit.ly/2JIKx1h>
- [39] Stecker, P. M., Fuchs, L. S., & Fuchs, D. (2005). Using curriculum-based measurement to improve student achievement: Review of research. *Psychology in the Schools*, 42(8), 795-819. Retrieved from <http://bit.ly/2H2veC1>
- [40] Stronge, J. H. (2018). *Qualities of effective teachers*. ASCD. Retrieved from <http://bit.ly/2PWF2lr>
- [41] Swail, W. S. (2003). *Retaining minority students in higher education: A framework for success*. ASHE-ERIC Higher Education Report. Jossey-Bass Higher and Adult Education Series. Jossey-Bass, 989 Market Street, San Francisco, CA 94103-1741. Retrieved from <http://bit.ly/2VNJI2a>
- [42] Walker, H. M., Nishioka, V. M., Zeller, R., Severson, H. H., & Feil, E. G. (2000). Causal factors and potential solutions for the persistent under-identification of students having emotional or behavioral disorders in the context of schooling. *Assessment for Effective Intervention*, 26(1), 29-39. Retrieved from <http://bit.ly/2VhUP40>
- [43] Wilkinson, L. A. (2016). *A best practice guide to assessment and intervention for autism spectrum disorder in schools*. Jessica Kingsley Publishers. Retrieved from <http://bit.ly/2V2xHSe>
- [44] Wright, G. B. (2011). Student-centered learning in higher education. *International Journal of Teaching and Learning in Higher Education*, 23(1), 92-97. Retrieved from <http://bit.ly/2ZW0LOM>
- [45] Zaman, S. (2010). *Relationship between cognitive levels, moral reasoning and academic achievement of secondary school students* (Doctoral dissertation, University of Punjab, Lahore). Retrieved from <http://bit.ly/2ZXEVdY>

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