

Positive Feedback Improves Students' Psychological and Physical Learning Outcomes

Asryan Ani

Central China Normal University, China

Email: asryan.ani1997@gmail.com

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Abstrak. Umpan balik positif adalah salah satu strategi inti yang digunakan untuk membuat lingkungan belajar dan hasil belajar siswa lebih baik. Penelitian ini bertujuan untuk mengungkap peran umpan balik positif dalam meningkatkan hasil belajar psikologis dan fisik siswa. Penelitian ini juga mengkaji efisiensi menggabungkan umpan balik positif dan negatif untuk memberikan pengalaman pendidikan yang lebih baik bagi siswa. Temuan analisis mengungkapkan bahwa ada hubungan positif antara umpan balik positif dan hasil belajar fisik dan psikologis siswa. Lebih khusus, umpan balik positif bermanfaat dalam meningkatkan motivasi, kepercayaan diri, self-efficacy siswa, dan keterampilan akademik siswa. Selain itu, penelitian ini juga menegaskan manfaat dari menggabungkan umpan balik positif dan negatif untuk meningkatkan hasil belajar siswa dan memajukan keterampilan akademik mereka.

Kata Kunci: *Positive feedback, Students' psychological learning outcomes, Students' physical learning outcomes.*

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Abstract. *Positive feedback is one of the core strategies used to make educational environment and students' learning outcomes better. This review aims at revealing the role of positive feedback in improving students' psychological and physical learning outcomes. Meanwhile, it questions the efficiency of combining positive and negative feedbacks in order to provide better educational experience for students. The findings of the analysis reveal that there is positive relationship between positive feedback and students' physical and psychological learning outcomes. More specifically, positive feedback is advantageous in increasing students' motivation, confidence, self-efficacy and academic skills. Furthermore, the study also confirms the benefits of combining positive and negative feedbacks in order to improve students' learning outcomes and advance their academic skills.*

INTRODUCTION

Education is an ultimate choice towards better future. In the 21st century the society appreciates the role of education and makes a lot of efforts to create an environment where educating and being educated are highly encouraged and appreciated. However, nowadays the standards for high-quality education have altered a lot. More specifically, in order to evaluate the quality of education students' learning outcomes should be examined. According to Beasley (2011), student learning outcomes (SLOs) are statements describing the knowledge, skills, attitudes, behaviors or values that students should be able to demonstrate at the end of their program of study. This means that assessing students' learning outcomes will let us evaluate the efficiency and the productivity of the whole educational process. In the beginning of the 20th century, Skinner (1938) defined learning as behavioral change because learning is usually determined by assessing behavioral change or altered behavioral outcome. Therefore, it is noticed that learning outcomes can change the behavior and the character of an individual. Considering this statement, students' learning outcomes can be divided into two groups: physical and psychological outcomes.

Understanding the significance of students' learning outcomes has led many educational specialists to try to find out some ways to improve students learning outcomes. Means to improve the students' learning outcomes are various, including Teaching at the Right Level (TaRL) (Handa, 2018) initiated in India according to which the students in a class are distributed based on their learning needs rather than their age; curriculum reforms (Nygaard & Kristensen, 2000) focusing on students' study and learning methods; and teacher trainings (Omayya, 2017) that will develop teachers' personality as well as nature by letting them be more flexible while working with students having different backgrounds. Besides, Shrivastava and Ramasamy (2014) consider providing feedback to be one of the most significant methods to improve students' learning outcomes. They believe that providing effective feedback is an indispensable tool for improving the quality of education and learning outcomes. Providing feedback is essential for avoiding students' uncertainty, correcting mistakes made by students, guiding them to choose better learning methods and encouraging them to strive for excellence. Pankonin and Myers (2017) mention that teachers' feedback influences their relationships with students and students' outcomes, including their academic engagement and aspects of their self-perceptions. The above elaboration comes to prove the fundamental role of feedback in students' learning outcomes and the special influence that accurately and smartly organized feedback can have on students' personality and academic progress. The approach towards positive and negative feedbacks varies greatly. On the one hand, some scholars find negative feedback to be an essential part of learning process as the latter can help students recognize their mistakes and work harder to avoid those mistakes in future (Cole, 2008; Fishbach, Eyal and Finkelstein, 2010). On the other hand, there are some scholars who believe that positive feedback can be more effective as it would encourage students to improve their academic progress, increase their self-efficacy, influence their personality by making them

more motivated and confident (Mitrovic, Ohlsson and Barrow, 2012; Park, Kondrak, Ward and Streamer, 2018; Gonçalves, Cardoza, Valentini and Chiviawowsky, 2018).

To conduct this study, it is significant to have clear objectives. The objectives of the study act like a guide for carrying out and fulfilling the research. One of the objectives of this study is to illustrate the existence of the influence of the positive feedback on students' psychological learning outcomes. Furthermore, it also concentrates on the impact of positive feedback on students' physical learning outcomes. Therefore, the next objective of this study is to delineate the presence of the impact of the positive feedback on students' physical learning outcomes. Finally, the last objective of this study is to highlight the possibility of successfully combining positive and negative feedbacks together. This means that apart from studying the impact of positive feedback on students' physical and psychological learning outcomes, this study also examines the possibilities of combining positive and negative feedbacks to have more effective and efficient learning outcomes.

The data of the following research review comes from distinguished and prominent psychological research journal articles. In detail, the primary sources for this study are taken from SSCI journal including *The Effect of Positive Feedback in a Constraint-Based Intelligent Tutoring System* written by Mitrovic, Ohlsson and Barrow (2012) published by *Computers and Education*; *Positive Feedback From Male Authority Figures Boosts Women's Math Outcomes* written by Park, Kondrak, Ward and Streamer (2018) published by *Personality and Social Psychology Bulletin* and *Enhancing Performance Expectancies Through Positive Comparative Feedback Facilitates the Learning of Basketball Free Throw in Children* written by Gonçalves, Cardoza, Valentini and Chiviawowsky (2018) published by *Psychology of Sport and Exercise* comprise the primary sources of this study. The secondary sources of this study are taken from various relevant articles and books as well as some reliable websites in order to analyze and deepen the knowledge about the effective influence that positive feedback has on students learning physical and psychological outcomes.

Overall, the findings of this study are expected to be successfully implemented both theoretically and practically. When it comes to the theory, this study is expected to highly enrich the existing literature about the connection between positive feedback and students' learning outcomes. As it combines several journal articles, it can be a fundamental ground for further research and enhance the existing knowledge on the topic. Practically, this study can be highly advantageous and appropriate for all the teachers, educators as well as researchers. When it comes to teachers and educators, it boosts the awareness among them and gives them the opportunity to apply all the knowledge concerning the topic in their classrooms. This is really relevant as due to the smartly implemented positive feedback it is possible to enhance students' academic skills as well as increase their motivation and confidence. As far as researchers are concerned, this study can support them to conduct further research on this topic and can serve as a ground for their research since this study reviews some admissible and reputable journal articles about the topic.

RESEARCH METHOD

To get better understanding of the topic, a lot of sources were considered. The sources were read and analyzed minutely considering the research objectives and diversity of the fields where the feedback was implemented. After gathering some sources and doing data reduction, some articles indexed with SSCI journal were selected as primary sources of the study. Besides, various relevant sources including some books, journal articles, documents and reputable websites were analyzed to provide theoretical support to the primary sources of the study. These sources comprised the secondary sources of this paper. Both primary and secondary sources were analyzed in detail in order to provide detailed and thorough answers to the research questions of this study. The outcomes of the analysis were afterwards proposed in the discussion part. The aforementioned procedure indicates that the methodology implemented to conduct this study is research review. This is because this study analyzes some primary sources supported by secondary sources in order to indicate the influence that positive feedback has on students' psychological and physical learning outcomes. The University of Wisconsin-La Crosse (2001) states that research review paper is a paper synthesizing the results from several primary literature papers to produce a coherent argument about a topic or focused description of a field.

RESULT AND DISCUSSION

Positive Feedback as an Effective Tool to Boost Students' Psychological Learning Outcomes

Feedback is one of the widely studied concepts in the field of education. A lot of research has been conducted to ascertain the impact of feedback on educational procedure as well as perceive the peculiarities of each type of feedback. The research articles reviewed in this study as primary sources stated that positive feedback is a very efficient tool for advancing students' psychological learning outcomes.

Park, Kondrak, Ward and Streamer (2018) prove through their brief quantitative study, positive feedback may benefit individuals in situations where they could be negatively evaluated based on their social identity. They combined five studies in their research questioning in each study the impact of positive feedback on one aspect of human psychology. Considering female's underrepresentation in STEM fields and the stereotypes overwhelmingly recognizing STEM as masculine domains, the female subjects in this research were considered to be more vulnerable and thus, were studied more minutely. All the five studies confirmed the significance of positive feedback in improving students' psychological learning outcomes especially when the feedback was provided by a male teacher as a representative of a prevailing gender in the field. Consistent with these ideas, women who received positive ("Good job") feedback on a math test from a male authority figure in math reported greater feelings of confidence (Study 1a), belonging (Study 1a, Study 1b), self-efficacy (Study 2), and expressed more favorable explicit attitudes, interests in STEM (Studies 3 and 4), and greater implicit identification with math (Study 4) than women who receive objective feedback. Men, however, receiving positive feedback on a math test perceived this to convey that they had ability in Math compared to those who

received objective feedback. Men also reported greater confidence, belonging in math and greater math self-efficacy when they received positive feedback compared to those who got a negative one (Study 5).

The next study conducted by Mitrovic, Ohlsson and Barrow (2012) hypothesizes that positive feedback works by reducing student uncertainty. The sample of this experimental study included the students from the SQL-Tutor introductory course where the control group was provided only with negative feedback while the experimental group got both positive and negative feedback. The results suggest that intelligent tutoring systems that teach primarily by addressing errors are more helpful if extended with a positive feedback capability. Meanwhile, the findings of the study also indicate that students who got both positive and negative feedback learned at twice the speed as the students who got only negative feedback. Therefore, this study illustrates that positive feedback influences students' psychological learning outcomes by avoiding uncertainty and hesitation and increasing their efficiency.

The last experimental study organized by Gonçalves, Cardoza, Valentini and Chiviawsky (2018) included the control group which was provided with only veridical feedback and the experimental group that was assigned veridical feedback and false positive social-comparative feedback during basketball free throw. One of the findings of the study stated that experimental group reported higher perceived competence, importance of doing well and persistence in practicing the task compared with participants in control group. It also confirmed the motivational role of the positive feedback on children's learning of sport motor skills.

All the aforementioned articles prove positive feedback to be an effective tool for boosting students' psychological learning outcomes. Through scrutinizing the whole studies in the primary sources, it is noticed that positive feedback effectively work to boost the students' learning psychology due to well-teaching preparation. Teaching scenario in the experimental research done by Mitrovic, Ohlsson and Barrow (2012) and Gonçalves, Cardoza, Valentini and Chiviawsky (2018) were prepared very well to figure out the impact on students. Wiggins (2012) states that feedback can be effective and helpful for students only if it is goal-referenced; tangible and transparent; actionable; user-friendly (specific and personalized); timely; ongoing; and consistent. Goal-referenced is the essential key as Hattie & Timperley (2007) convince that the goals associated feedback bring success in learning than more general without associating with feedback.

Another result of scrutinizing reveals that positive feedback is gradually able to enhance the students' self-confidence towards the challenges and difficulties they face during learning activities. The primary sources indicate technical proof that positive feedback can empower the students to revamp their performance without feeling worry and/or anxiety of making mistakes. It infers that teachers' constructive comments embolden the students' self-confidence as well as psychological state. This logical analysis aligns with Nichol and Dick (2006) and Al-Bashir, Kabir and Rahman (2016) stating that feedback, particularly the positive, caters methodical evidence about progress and achievement gained by students. They even convince that the results of teachers' positive insights is greater than high stakes summative

assessment tasks where evidence is only about success or failure or about how students compare with their peers.

Positive Feedback as an Efficient Strategy to Advance Students' Physical Learning Outcomes

Positive feedback is very beneficial and advantageous thus it is not limited in having positive influence on students' psychological learning outcomes. Recently the attention of many scholars and researchers has been caught by the influence of positive feedback on students' physical learning outcomes. All the primary articles stated proved the beneficial impact of positive feedback on physical students' learning outcomes.

Gonçalves, Cardoza, Valentini and Chiviadowsky (2018) tried to study not only the influence that positive feedback has on the students' psychological learning outcomes but also its impact on students' physical learning outcomes. The findings of the study state that the group receiving positive comparative feedback demonstrated higher learning of the basketball free throw than the group that only received veridical feedback. In other words, this study highlights the fact that providing children with general positive feedback, implying that their performance was slightly higher than the performance of peers led to more effective learning of a sport skill than not giving them such information.

As have already been mentioned Mitrovic, Ohlsson and Barrow (2012) proved that students who received both positive and negative feedback mastered a certain amount of new knowledge in half the time required by students who received negative feedback only. This shows the effectiveness of positive feedback for increasing students' self-efficacy and time management. These are significant skills indeed that highly improve students' learning outcomes by letting them get more knowledge in shorter time. Consequently, this comes to prove that the existence of the positive feedback can increase the amount of knowledge obtained by students in shorter time and be a perfect tool for advancing students' physical learning outcomes.

The last study conducted by Park, Kondrak, Ward and Streamer (2018) also includes findings related to the influence of positive feedback on students' physical learning outcomes. The findings of the study state that positive feedback can improve students' confidence, self-efficacy, motivation and feeling of belonging to the field of study. Meanwhile, a lot of studies conducted before (Muhammad, Bakar, Mijinyawa and Halabi, 2015 and Srivastava, 2018) state that a strong positive relationship exists between motivation and students' academic performance. Combining these findings, it is obvious that positive feedback highly improves students' physical learning outcomes.

Overall, the primary sources of this study discussed above confirm the efficient role of positive feedback on students' physical learning outcomes by improving students' knowledge and developing their academic skills. Hereby, it can be implied, that positive feedback is a significant tool to be implemented in the learning process in order to ensure better academic outcomes. Pekrun, Goetz, Titz and Perry (2011) indicate in their study that academic emotions significantly influence students' academic achievement and learning strategies. Meanwhile,

Reyes, Brackett, Rivers, White and Salovey (2012) state that emotional climate has a significant role in promoting students' academic achievements. These two studies value the role of students' emotions in increasing their academic progress. Obviously, providing students with positive feedback improves their emotional state and climate in the classroom. Consequently, positive feedback can also highly influence students' academic performance due to its function of balancing the students' feelings and emotional climate in the classroom. Hence, implementation of positive feedback has two-sided positive impact on students' learning outcomes by influencing their psychological state and academic performance.

The Effectiveness of Combining Positive and Negative Feedbacks

One of the significant issues that the researchers have been concerned with is if the combination of positive and negative feedbacks will ensure effective learning outcomes or not. All our primary sources concluded that combining positive and negative feedback can provide efficient and productive learning outcomes.

In order to conduct their experimental study, Mitrovic, Ohlsson and Barrow (2012) provided their control group with negative while experimental group with the combination of positive and negative feedbacks. The findings show that experimental group managed to complete SQL-Tutor tasks in twice less time as the control group. Initially, the SQL-Tutor course provided students with only negative feedback. Yet, the existence of the positive feedback as a tool to avoid uncertainty provided better learning outcomes. These researchers conclude that negative feedback is useful, however, if it is combined with positive feedback it will provide better and more efficient outcomes.

Meanwhile, the next primary source by Gonçalves, Cardozoa, Valentini and Chiviacowsky (2018) also introduces the beneficial influence of the combination of positive and negative feedbacks. In this study the control group was provided with only veridical feedback which can be observed as a negative feedback since whenever students got only veridical feedback, they did not get any other information about their performance. Consequently, the students who performed worse than they were expected to do got some negative feelings. This fact makes the veridical feedback have the same value as a negative feedback. In short, the findings of the study show that the group receiving positive comparative feedback combined with veridical feedback demonstrated higher learning of the basketball free throw than the one that received only veridical feedback.

To continue with, the last primary source by Park, Kondrak, Ward and Streamer (2018) included the same idea from the previous study. The findings imply that students receiving both positive and objective feedback were more efficient and confident than those who received only objective feedback. From here, we can observe objective feedback as negative feedback because the conditions of the research were not favorable for the participants of the study. The STEM fields are usually quite frustrating for women because of the existing stereotypes of typically male and female occupations. As in most cases (from Study 1 to Study 4) the participants were women then consequently, objective feedback may be observed as a negative one considering all the hardships that women face in STEM fields.

Therefore, based on the findings of this study, it is evident that the combination of positive and negative feedbacks is absolutely efficient and productive.

Overall, all the primary sources proved the combination of positive and negative feedbacks to be effective and beneficial in educational procedure as well as in providing students with better learning outcomes. Ashlie Pankonin and Myers (2017) state in their study that teachers use more negative feedback than positive feedback in the classroom and the use of positive feedback had significant effects in promoting students' continuation of their behaviors. However, the same study indicates that the use of negative feedback is necessary to classroom functioning and the detrimental effects typically associated with negative feedback that can be avoided if teachers pay attention to the phrasing of the feedback. Consequently, this study emphasizes the significance of both negative and positive feedbacks and illustrates the effectiveness of combining positive and negative feedbacks. Besides, Poulos and Mahony (2008) mention that students prefer specific rather than general feedback. Therefore, in order to have productive results, the teachers should not only make sure to combine positive and negative feedbacks effectively but also make their feedback specific, related to individuals. Otherwise, generally provided feedback will not be efficient enough. It is implied from these studies that combining positive and negative feedbacks is essential for creating perfect learning atmosphere to advance students' academic skills and improve their psychological state by implementing individual approach.

CONCLUSION

All the primary sources of the research confirmed the fact that positive feedback has very beneficial influence on students' physical and psychological learning outcomes. The support to psychological outcomes is conducted by increasing students' motivation, confidence, self-efficacy and other values that strongly influence students' progress. Meanwhile, as the studies state, positive feedback also improves students' physical learning outcomes. Due to positive feedback many students receive knowledge more efficiently and develop their academic skills easily. Another finding of this study is related to the combination of positive and negative feedbacks. All the studies proved the effectiveness and productivity of combining positive and negative feedbacks. To sum up, positive feedback is a beneficial educational strategy implemented to improve students' psychological and physical learning outcomes. Combined with negative feedback, positive feedback will advance students' academic skills and create more effective and motivating learning atmosphere.

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