

Mixed feelings

The dark side of learning motivation and the bright side of negative emotions

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Expressions like “bittersweet,” “love-hate,” “tears of joy,” and “mixed feelings” are a reminder that positive and negative emotions may be experienced simultaneously. However, such mixed feelings are rarely discussed in the education literature. Past studies have often treated positive and negative emotions as mutually exclusive, focusing either on the desirable consequences of positive emotions or on the harmful effects of negative feelings. However, new research findings and methods have started to shed light on the bright side of negative emotions and the dark side of positive feelings.

Emotions and motivation are key factors in successful adjustment, learning, and achievement. Research on emotions is thriving in many disciplines, including management, sociology, psychology, and education. Particular attention has been given to the beneficial effects of positive emotions, for instance in the fields of education and psychology. Positive emotions are said to make learners thrive and flourish, as well as to enhance creativity, concentration, memory, and well-being, among other desirable outcomes.

It is also often argued that positive emotions such as interest, joy, and happiness lead to the desirable intrinsic motivation that benefits learning, performance, and well-being. Much of the previous research has concluded that high intrinsic motivation and positive emotions tend to be beneficial, while negative emotions and less enjoyable forms of motivation are detrimental for learning and well-being.

In some situations, negative emotions can even be beneficial

However, recent shifts in research methods have led to findings revealing that positive and negative emotions are less separate than often thought. Examinations of intraindividual constellations of emotions have shown that a person may experience both positive and negative emotions simultaneously, within a given situation.

For instance, students may feel anxious and stressed, but also highly motivated at the same time. One reason is that we tend to become anxious when facing uncertain outcomes of challenging tasks that are important to us. If you have ever defended a dissertation or asked someone to marry you without knowing whether the answer would be yes or no, surely you know what it feels like to be “anxiously eager.” In such situations, negative emotions do not always lead to negative results, but may in fact be beneficial.

“Educators and researchers have increasingly come to recognize the possible upsides of negative emotions.”

Feeling anxious can activate resources that would not be available in a more relaxed state of mind. Athletes, for example, have been found to perform well in challenging and anxious situations if they feel able to master the challenge at hand.

Likewise, anger may enable a person to overcome obstacles or to be otherwise productive, as when a scientist puts greater effort into a paper that a competing researcher has tried to prevent from being published. It has also long been known that a negative mood can improve systematic information processing.

Educators and researchers have increasingly come to recognize the possible upsides of negative emotions. Instead of suggesting that we avoid negative feelings at all costs, the recommendation is now that we use negative emotions as sources of information about what needs to be changed, and that we use all of the emotions we experience, including the negative ones, in the most beneficial, emotionally intelligent way possible

High motivation for learning and achievement comes at a price

Just as negative emotions are not always bad, positive emotions are not the solution to every problem. Positive emotions may lead to negative outcomes. It has been shown, for instance, that positive fantasies about a desired goal can make achieving that goal less likely, unless a specific plan of action has been devised for dealing with possible adversity.

It also appears that happiness and other positive emotions are beneficial only in moderation; when overly intense, they may have an adverse effect on well-being, creativity, and even health and life.

Likewise, motivation for learning and achievement comes at a price. Up to one in four high school students simultaneously experiences a strong sense of engagement (intrinsic motivation) and symptoms of exhaustion and burnout. Parents and educators should keep this in mind, because it suggests that highly motivated students, too, may need our attention.

Such highly motivated students may have difficulty sustaining and renewing the resources they need for their work and well-being. While it is often argued that passion has a positive effect on learning and performance, people with a passion for an activity often experience both positive, intrinsic feelings and the obsessive feelings that are associated with negative emotions, risky behavior, and reduced well-being.

In sum, recent research suggests that

- (1) both positive and negative emotions may have beneficial functions, if regulated and used wisely,
- (2) experiencing positive emotions and high intrinsic motivation does not guarantee healthy adjustment, and
- (3) positive and negative emotions and motivations often occur simultaneously, within individuals and situations.

New insights through new methods

New methodological developments will make it easier for future studies to examine the intraindividual and in-the-moment co-occurrences of positive and negative emotions and motivational experiences. Newly developed smartphone apps have made it easier and cheaper than ever before to gather in-the-moment measures of co-occurring emotions in large samples of participants.

Moreover, intraindividual analyses, which have become popular only in recent years, are needed to identify the paradoxical co-occurrences of positive and negative experiences within individuals.

For instance, another helpful innovation is the approach of applying network analysis to the study of co-occurrences among emotions. This approach counts and visualizes the number of times two emotions are experienced together (see the network image above). In contrast to classic correlation analysis, such co-occurrence network analyses reveal both rare and frequent links between any given pair of emotions. With this approach, we found that, depending on the applied emotion measure, positive and negative emotions were experienced simultaneously by 34% to 85% of the 22,000 high school students surveyed in the US, although those emotions were negatively correlated.

Combining intra-individual research methods with in-the-moment measures will help us to understand the circumstances under which positive and negative experiences occur simultaneously. Given that much of the previous research has focused on only the bright side of positive emotions or the dark side of negative emotions, it will be exciting to learn from future studies what happens when the two come together.

Among the first applications of these findings will be to teach learners how to use negative emotions in a positive way and to couple the call for student engagement with resources-oriented support.

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