


Essay

# When We Teach for Positive Creativity, What Exactly Do We Teach For?

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**Abstract:** Positive creativity is creativity that makes the world a better place—that makes a positive, meaningful, and potentially enduring difference to the world. Positive creativity can be a bit of a slippery concept in that, what is positive to one person or one group may be neutral or even negative to another group. Much of teaching young people for positive creativity, therefore, involves providing the tools to decide what positive creativity means to them, and teaching them how to defend their decision. This essay focuses especially on alternative conceptions of what positive creativity means. It considers a variety of approaches, such as definitional models—objective and subjective betterment; ratings, including from layperson and experts; philosophical models—utilitarian and categorical-imperative models; decision-theory models—minimax, maximin, and maximax models; psychologically based models—a Four-C model and a model based on wise creativity. The essay also discusses steps toward teaching explicitly for positive creativity.

**Keywords:** creativity; positive creativity; neutral creativity; negative creativity; wise creativity



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Creativity is typically defined as the formulation of an idea that is both novel (with respect to some audience) and useful (again, with respect to that audience) [1,2]. Teaching for creativity has always seemed to be a challenging thing to do [3–5]. Even harder, however, is teaching for creativity that is positive—that somehow makes the world a better, not a worse, place. If, as we believe, the future of the world hinges on the positive contributions of creativity, it would help to know what constitutes *positive creativity* and the ways to integrate positive creativity into educational settings. The first step to teaching for positive creativity is exploring with students what it is. As creative thinking can be discouraged so quickly in schooling [6], the earlier teachers start teaching for positive creativity, the better.

## 1. What Is Positive Creativity?

The world is full of concepts that, at first, seem fairly simple, and that then turn out to be fairly, very, or even maddeningly complex. For example, one can look at intelligence as simply what it is that intelligence tests measure [7], as consisting of seven underlying factors [8], as consisting of 120, 150, or more underlying factors [9,10], or as not even being a single psychological construct but rather as comprising eight independent “multiple intelligences” [11]. Creativity is at least as complex and, arguably, more so. Positive creativity is even more complex.

Although the exact definitions vary, positive creativity is creativity that produces positive ends—the greatest good for the greatest number of people [12]—that somehow makes the world a better place on some level [13,14]; neutral creativity has ends that are neither positive nor negative; negative creativity achieves negative ends.

When the senior author of this article started writing about positive creativity, it all seemed quite simple [13,15]. That was then.

As we started to design a study on positive creativity, we discovered, as perhaps have others before us, that neutral creativity is something of a misnomer. In an informal

study, we attempted to measure the positivity of innovations using laypersons' ratings. We placed neutral creativity at the middle of the spectrum of ratings from positive to negative. Neutral creativity was supposed to encompass innovations that neither had much of a positive effect nor much of a negative effect on the world; what we discovered was that the mean of ratings was deceptive. Neutral creativity seemed to characterize innovations that had a neutral effect not so much, but rather innovations that were perceived differently by different individuals or groups, or that were perceived as very mixed in their outcomes by different individuals or groups. Indeed, a given individual might even have perceived the particular innovation as having had mixed outcomes. In other words, what characterized the ratings was not neutrality, but a high variance—with ratings that could be both highly positive and highly negative.

Consider the following example. One group might perceive an innovation, such as an atomic weapon, as positive—it ended World War II, or it provides deterrence in a way that no other weapon does—whereas another group perceives the same innovation entirely differently—the atomic bomb killed thousands of people in Hiroshima and Nagasaki and has the potential to kill millions or even billions more. In other words, the mean of neutral creativity innovations, as perceived by laypersons, may well be close to the relative zero of the rating scale, but it may show a large standard deviation, indicating different, or even contrasting views of positivity (or negativity) of innovations. Thus, the neutral label may actually characterize at most, a few people's views. Rather, it may characterize an innovation perceived differently by different people or perceived as diverse in its outcomes by a single person.

Perhaps this result should have been predictable. Unfortunately, things got worse. It turned out that even innovations that at first seem like good exemplars of positive creativity have their detractors. Recently, the U.S. Senate passed a USD 1.9 trillion economic relief bill to help people who are struggling. The bill was certainly innovative—it was both novel and useful to millions of people who have been unable to make ends meet; however, the bill received no Republican support [16]. Republican legislators clearly did not view it as an example of positive creativity. Similarly, the Sabin vaccine for polio seemed like a great innovation, except that its weakened virus, passing from person to person, could gain strength and gain virulence [17]. Leaded gasoline once seemed like a great idea to make gasoline more economical, until its toxic lead content was discovered [18]. Thalidomide, once prescribed as a palliative drug for morning sickness, seemed like a great idea until it became known that it caused birth defects [19]. Additionally, modern vaccines, such as for COVID-19, seem like great ideas, but it is impossible to know what their long-term effects will be.

The innovations that seem most likely to be received in a uniformly positive way would seem to be in the humanities, except that many great novels were criticized when they first were published [20]. Artwork, such as Leonardo da Vinci's *Mona Lisa*, seems only to be viewed positively, but then, there are works of modern art that evoke, at best, mixed reactions, with some people saying that they could have painted a particular work too and that the work contributes nothing positive or even meaningful to the field of art.

Many investigators emphasize that judgments of creativity are influenced by one's sociocultural and historical contexts. That is, creativity has a meaning within a sociocultural context that defines particular innovations as both novel and creative [21]. It would make sense, therefore, that positive creativity may also be defined in a sociocultural manner. What is deemed positive in one sociocultural context may be judged as negative or neutral in another sociocultural context. Although this is largely true, almost unanimous agreements exist in relation to several issues, such as declarations against human-rights violations. For example, the human rights violations of the 9/11 terrorist attacks in 2001 were negatively creative regardless of whether one particular person or group thought them to be positive or not. Does it matter who the person or group was, how many agreed with them, or how their evidence could be critically evaluated? Certainly not.

## 2. What Makes Positive Creativity, Positive?

A major obstacle to teaching for positive creativity is each individual deciding what, for them, constitutes “positive” creativity. Giving students of positive creativity guidelines for determining what “positive” means to each of them is one of the most useful things instructors can do.

It is not always clear what it means for an innovation to be “positive.” There are several different models of what might constitute the “positive” in positive creativity. What are some of these alternative models? We discuss five approaches to such models: (a) definitionally based models—objective and subjective betterment; (b) consensually rated betterment by laypersons and experts; (c) philosophically oriented approaches; (d) decision theory-based models—minimax, maximin, and maximax; (e) psychological approaches—Four C and wise creativity. Table 1 summarizes the approaches.

**Table 1.** Conceptions of Positive Creativity.

Kind of Model	What Is It?
<i>Definitional Models for Positivity—Betterment</i>	Positive creativity as definitional
Objective Betterment	Attempts at an objective definition of positivity as <i>creative betterment</i>
Subjective Betterment	Attempts at a subjective definition of positivity as <i>creative betterment</i>
<i>Consensually Rated Positivity</i>	Attempts at consensual ratings as to what is considered to be “positively creative”
Lay Ratings	Laypersons’ ratings as to what is considered to be “positively creative”
Expert Ratings	Experts’ ratings as to what is considered to be “positively creative”
<i>Philosophically Based Conceptions</i>	Attempts at philosophical conceptions of what is “positively creative”
Utilitarian	Utilitarian approach to creative positivity—greatest good for the greatest number
Categorical Imperative	Categorical imperative approach to positivity—there is a true creative “positive”
<i>Decision-theory Models</i>	Positive creativity conceived of through ideas from decision theory
Minimax	Positive creativity as minimizing maximum loss
Maximin	Positive creativity as maximizing minimum gain
Maximax	Positive creativity as maximizing maximum gain
<i>Psychologically Based Models</i>	Attempts at psychologically based models of what is “positively creative”
Four-C Model	mini-c, little-c, Pro-C, Big-C approach
Wise Creativity	Approach based on the notion that positive creativity seeks a common good over the long as well as the short term through the infusion of positive ethical values

### 3. Definitional Models of Positive Creativity: Betterment

Definitionally, positive creativity is about some kind of betterment. Betterment refers to an innovation’s somehow making the world a better place, at some level. Betterment can be potentially defined in either objective or subjective terms.

#### 3.1. Objective Betterment

In a sense, the ideal definition of positive creativity would be in terms of some kind of objective betterment. Such a definition would bypass the need for subjectivity and would make defining positive creativity a simple matter. For example, the vaccinations against COVID-19 would seem to fulfill the requirement of creatively objective betterment: they use a technique, mRNA vaccination, that is both novel and useful. Additionally, they are positive in that they presumably have prevented hundreds of thousands of people from contracting COVID-19, or at least, a severe form of it. Another example might be Da Vinci’s *Mona Lisa*. In a typical year, the Louvre attracts 30 thousand people a day who come to see the *Mona Lisa* [22]. Why do so many people consider the *Mona Lisa* to be objectively positively creative? How does the painting add to the greater good for the greatest number of people?

The painting is certainly novel: it is unique in its effect on the world. Additionally, it is useful in that it has changed, for millions of people, the way they think about art. Its creative positivity may be a result of the pure sense of joy and amusement the painting brings to the lives of millions of people. Bringing joy into people’s lives is objectively

positive. Does the painting hurt anyone? Does it add to the worries of the world? Certainly not. The aesthetics of the painting adds a positive value to the lives of its visitors. Therefore, we might consider it to be objectively positive. Much the same could be said of COVID-19 vaccines; they have alleviated virus fear and anxiety for millions of people around the globe, as well as, most likely, prevented hundreds of thousands of cases of COVID-19.

It is always possible, of course, that even the most seemingly objectively positive creative innovations will have negative consequences in the long term. For example, the safety and long-term efficacy of mRNA vaccines is still a matter of at least some debate [23]. Moreover, the AstraZeneca vaccine, which is not an mRNA vaccine, has had a problematical launch, with concerns about whether it causes blood clots [24]. While some of the debate may be seen as purposeful disinformational propagandizing [25], other voices in the debate are experts in mRNA, as discussed by Lowe [26] and commentators. Additionally, incredible as it might seem to some, it has been argued, even plausibly, that the *Mona Lisa* actually may be bad for art [27], in part because it sucks attention away from other superb pieces of artwork.

The larger problem with objective measurements of positivity in creativity is that what constitutes objective criteria may itself come under dispute. If there are crushing lines to see a work of art, as in the case of the *Mona Lisa*, and if the painting takes away attention from other works of art, are the numbers of people really a good indication of the positivity of the art? Is the number of people who use cars or who use cell phones, or who commit immoral acts, for that matter, a definitive indication of creative positivity?

As noted above, Thalidomide would have passed objective measures of creative positivity until it was discovered to cause birth defects, and then it did not seem positive. What appeared to be novel, useful, and positive ended up only being novel. Nonstick cookware seemed to be a blessing until it was not: now it appears that the chemicals in it and many other everyday substances may account for radical decreases in sperm count for men since the 1970s [28]. Fast food could be seen as meeting various objective criteria for positive creativity—it is immensely popular—but it fails on other objective criteria—such as nutritive value and preventing obesity [29]. Even cell phones, one of the most popular inventions ever, which have so facilitated communication, leave the jury still out as to whether they might, in the long run, cause cancer [30].

To summarize, the problems with objective determinations are that different objective criteria might lead to different conclusions, the same criteria might be interpreted in multiple and inconsistent ways, and that what appears to be true according to objective criteria at one time or in one place may not seem to be true in another time or place. All the attention objectively paid to Antonio Salieri's music in the short run has earned him only a role as a foil to Wolfgang Amadeus Mozart in the long run.

If someone is seeking to learn how to be positively creative, they might discover that the objective criteria they thought they had, evaporate upon closer examination. Perhaps there are subjective but, nevertheless, strong criteria.

### 3.2. Subjective Betterment

Glăveanu and colleagues [21] have suggested that, in the end, creativity is defined in a sociocultural manner, as the person and the context are inseparable. What is novel and useful is always with respect to a cultural context. Human experiences are patterned on a sociocultural basis and individuals and their environments shape each other [31]. No one is creative in a social vacuum. In this view, judgments of novelty and usefulness may vary in a sociocultural manner. This view is satisfying because it does not impose one culture's views on another. This sociocultural conception also could be applied to positivity, with positivity then viewed as defined in a sociocultural way. For example, in the post-industrialized West, "democracy" has generally been considered to be a desirable and constantly evolving form of government, worthy of great care and of preservation [32–34].

The problem is that people in increasing numbers of countries, including Western countries, such as Brazil, Hungary, and Poland, are voting in authoritarian or authoritarian-

leaning governments, and the United States came close in 2020. As Applebaum [32] points out, such governments are alluring because they place, at the top of their sociocultural hierarchies, many of the people who failed under previous meritocratic systems but who believe that they should have succeeded. As Applebaum further points out, blind loyalty is a major currency of success, and one does not have to have any great talent other than a willingness to conform and to cast aside one's ethical reservations to have a shot at success under such a system.

One strength of sociocultural perspectives is its thrust on the interdependence between self and others—the actor and audience [21]. What is considered to be positively creative may be predicted from a sociocultural understanding of one's sense of self. Two distinct senses of self—independent and interdependent—have been found to distinctly influence people's worldviews [31]. Cultures that construe the *self as independent* may approach positive creativity with a reference to their own thoughts, feelings, and actions. In contrast, cultures with a pronounced belief of the *self as interdependent* may approach the same ideas with reference to the thoughts, feelings, and actions of others with whom the individual is in some kind of meaningful relationship.

Creativity may seem like a purely individualistic endeavor to independent selves, making it difficult for them to accept the notion of other-oriented creativity. However, the same ideas of positive creativity may seem quite natural to interdependent selves. For example, according to Indian perspectives, creativity can be construed as being involved in worship, and creations such as music and art are offered in the service of the supreme spiritual divine [35]. The very concept of creativity in Indian cultures is other-oriented and comes close to positive creativity. Therefore, sociocultural perspectives may offer useful insights about cultural variations in the conceptions of creativity and will have educational implications specific to an individual's culture.

However, from the sociocultural view, there is no objective meaning of "positive creativity." What is "positive" depends on the socio-cultural setting. Absolute relativism may leave some sense that something is missing—firm ground on which to anchor one's sense of positivity. For example, in 1790, 18% of the population of the United States was enslaved [36]. Most of the white sociocultural grouping in the Southern United States accepted this arrangement, and many eagerly welcomed it; many in the North also accepted it, even if only for implementation in the South. A war would later be fought over it, so passionate were many white Southerners in defense of the system.

The Black slaves were captured and enslaved in ways that were, at the time, novel and useful to the White population. The enslavement was thus, to them, "creative," and in their ethical system, despite their near-universal acceptance of Christianity, viewed in a positive way [37]. Did that make slavery a shining exemplar of "positive creativity"? Was Hitler's reign an example of positive creativity if Christian German society in the late 1930s accepted it as novel, useful, and positive to their system of values? Something would seem to be missing. Many of today's authoritarians invoke religious cause, to justify or perhaps to launder their beliefs in the subjugation of others. Those subjective views may not be adequate for a baseline to establish what is positive creativity.

#### 4. Consensually Rated Positivity

One way of establishing the creative betterment achieved through positive creativity is, quite simply, by asking people what is positively creative. There are two obvious groups to ask, laypersons and experts. If an individual wishes to develop positive creativity, he or she can ask others what those others believe is positive, negative, or neutral.

##### 4.1. Ratings by Laypersons

As creativity is determined by people's evaluations of novelty and usefulness [1], it may be that asking people to evaluate creative positivity also may be the best way to go to determine what is positively creative. In the end, perhaps, people's assessments are all we have. It is no great challenge to convince people, especially college students enrolling



for credit in psychology and related courses, to sit in a laboratory and to provide ratings of the positivity of a creative contribution. Therefore, if judgments are subjective and are influenced by sociocultural contexts, having laypersons provide ratings would seem to be a reasonable way to assess positive creativity.

To the extent that there is a problem with lay ratings, it may well be that laypersons are sometimes, perhaps often, not in an ideal position to judge the positivity of a creative contribution. Moreover, they disagree greatly among themselves. For example, the incursion into the Capitol building in Washington, D.C. on 6 January 2021 would certainly count as novel and, to those who believe the U.S. government has sold out the people it represents, useful. They seem to believe that they were the vanguard of a new American Revolution. Those who opposed the incursion may find it hard to imagine its being useful as well as novel. However, nearly half of Republicans as of early 2021 approved of the incursion [38]. Was it “positive”? One could argue about this on political or historical grounds, but to those who saw it as the beginning of a new American Revolution and a new beginning for the United States, it was positive. To those who saw it as a treasonous insurrection, it was anything but positive. Lay ratings, therefore, would seem to be extremely relativistic. Especially in current times, with the polarization that exists in society, it is hard to know if there is much of anything that everyone would view positively.

#### 4.2. Ratings by Experts

A possible solution to the problem of laypersons not recognizing what constitutes positive creativity is to rely on ratings by experts. Such experts might be in the field of creativity, perhaps others in the field of ethics, and some others who hold subject matter expertise on the given creation. While creativity experts might evaluate the quality of the creation and ethics experts might decide the positivity of the creation, the subject-matter experts might provide insights on the usefulness, short-term and long-term impact, and help the creativity and ethics experts in making their respective decisions.

The problem is that even experts disagree among themselves. For example, the most recent handbook in the field of creativity [1] represents a wide variety of theories and models of creativity that only partially overlap. The experts clearly disagree among themselves as to how to understand creativity. Additionally, experts on ethics also have serious disagreements among themselves [39]. Thus, by using experts to supply ratings on positive creativity, one might receive more erudite responses, but it is not clear that one would get more uniform responses or even responses that come closer to some unknowable truth.

Ratings can be useful. However, an individual seeking to develop their positive creativity might conclude that, no matter whom one asks, ultimately, one must decide for oneself what is better or worse, so that one needs to go beyond surveys. Perhaps there are objective ways of determining what is positive and will better the world.

### 5. Philosophically Oriented Approaches

A different approach to understanding positivity in creativity would be through philosophical thinking on the subject. Perhaps students of creativity could figure out what is positive through a study of philosophical thought. Several different sub-approaches might be relevant.

#### 5.1. Utilitarianism

Utilitarianism, proposed by John Stuart Mill [40], advocates for the greatest happiness (or here, good) for the greatest number. James and colleagues [12] take a largely utilitarian approach of defining positive creativity in terms of the greatest good for the greatest number of people. This is a majoritarian view of what is good. On the one hand, it is difficult to argue against seeking the greatest good for a majority. Indeed, some of the populist politicians of the 21st century have taken a related position—that they—often, they alone—will look out for the disregarded majority who have not been adequately benefited by the policies of past politicians, which have tended to favor elites or, at least,

people who are not like those in the majority who have been neglected. On the other hand, the downside of such a view is rather obvious: such a view sometimes, perhaps often, is used as an opening bid for a government that, once in power, becomes authoritarian, as has happened around the world today as in the past [41,42]. The authoritarians, once in power, primarily look out for themselves and their supporters and try to ensure that citizens will not be able to vote them out of power, as almost happened in the United States after the 2020 election [43]—the play was right out of the authoritarian playbook, although it fell short of success.

The U.S. presidential election of 2020 showed the problem with utilitarianism in modern society. Who, exactly, is the majority? Additionally, what will the majority, or more likely, those who believe they should be the majority, do to ensure that they, and perhaps only they, enjoy the fruits of happiness and success? Recently, a lawmaker in Arizona, U.S., argued that the “quality” of votes should count [44]. This assertion is strangely reminiscent of the logic of the “three-fifths” compromise of 1787, according to which the Black population of a state would count toward assigning numbers of delegates to states in the U.S. House of Representatives.

If quality is to count, who is to determine quality? Presumably, the majority or aspiring majority that believes they deserve benefits not due to others.

Strict utilitarianism does not work so well when there is a large gap of any relevant kind between the majority or aspiring majority and the rest. It may then end up that the very creative actions that benefit the majority or aspiring majority hurt the minority. It is even possible that actions will be taken to prevent majorities from being majorities, as in the case of voter suppression or, in more extreme cases, genocides. Utilitarianism might work if only the majority group were as assiduous about guarding minority rights as they were about guarding their own rights. If only.

### 5.2. Categorical Imperative

The idea of the categorical imperative, advocated for by [45], is that there are certain moral stances that are simply correct and right. These are stances that, at least in theory, any normal, rational adult individual would recognize upon thinking about an issue rationally and reflectively. An example might be the so-called Golden Rule, according to which one should act toward others as one would have them act toward oneself. This rule simply requires that one give others the same rights one would want for oneself. They are “imperatives” in the sense that they must be correct, according to any reasonable and rational standard.

On this view, what is “creatively positive” should emerge from rational reflection by anyone of goodwill. The attraction of this point of view is that, although it does not precisely define what is “positively creative,” it does argue that rational people of goodwill should all come to the same conclusions. This standard has proven itself to be more elusive in practice than it has been in theory, or at least, in Kant’s theory. If people could arrive at such consensuses, perhaps there would be peace and goodwill among all peoples of a kind that so far have seemed to elude the world. Even the Golden Rule has been elusive, as majorities have crushed minorities, as is happening right now in Myanmar and other countries where majorities are suppressing the rights of people, and in some cases, such as in China, imprisoning or “re-educating” minorities in thinly disguised concentration camps [46]. The camps may offer novel re-education that is useful to the oppressing population, but such creativity is certainly not positive for those who are subjugated. However, this view of reality should not discourage proponents of positive creativity any more than other realities regarding ideal expectations. Any gaps in the ideal imperatives and the true reality may indicate opportunities for interventions of educating for positive creativity.

## 6. Decision-Theory Models

These models of positive creativity take their lead from decision theory.

### 6.1. Minimax

The minimax criterion arose in part from the work of John Horton Conway on game theory [47]. The basic idea is that one wants to minimize the maximum negative outcome for any player in a game, that is, minimizing the potential regret. This is also known as the risk-neutral strategy. A person who uses a minimax strategy asks what the worst that can happen is, and if that worst is too bad, they will simply not make a decision that they believe could lead to that outcome. In terms of positive creativity, minimax would suggest that creativity is positive when the worst possible future outcome for anyone is as minimally bad as is possible. For example, with vaccinations against diseases, health agencies would tend not to approve vaccines that, even if they work for most people, can result in permanent disablement or even death for some users. As we write, the use of the AstraZeneca vaccine to prevent COVID-19 has been halted in some countries because of the possibility that it may lead to fatal blood clots [48]. In doing so, the authorities traded off the risk of people getting COVID-19, which can be fatal, with a potentially life-saving vaccine that, they believed, might be fatal. They were trying to minimize the worst possible outcome, at the risk of outcomes that could also be quite bad. The vaccine was creative, but was it positively so?

The attractiveness of minimax is that no one suffers too much, at least, in theory. If there is a positively creative innovation, the Hippocratic notion of “First, do no harm” is allowed to take precedence over whatever positive effects the innovation may hold. The downside to such an approach is that if negative effects are very infrequent, one may pass up a great deal of creative positivity to prevent creative negativity. For example, if it were the case that the AstraZeneca vaccine did lead to blood clots, but it prevented many more deaths than it caused, there might be an argument for continuing with the vaccine. Similarly, even relatively benign drugs can, at times, lead to rare and unpredictable allergic reactions, with very bad results. However, does one stop administering the drugs because of the rare side effects? Should the great creative positivity of innovation be allowed to compensate, even if it has very negative effects for a few?

### 6.2. Maximin

The maximin rule [49] maximizes the minimum gain for all relevant parties. It is also known as a risk-aversion strategy. If there is a positively creative innovation, therefore, it is viewed as positively creative if it maximizes the minimum gain for anyone potentially affected by the innovation. Although the maximum gain may not be that great, at least everyone, hopefully, will gain something.

The advantage of this rule is that the innovation is at least somewhat good for everyone concerned. The cost is that it may not be that great or wonderful for anyone. Examples of this rule might include policies of welfare economics, such as raising the minimum wage (i.e., a small gain for a large group). In the case of the recent pandemic, the decision to impose an immediate lockdown to prevent deaths and to keep the mortality rates down might be another example of the maximin rule. Those countries with a higher emphasis on welfare politics may have imposed longer lockdown periods at the cost of halting the economy. The earlier example of a relief bill can also be seen as a maximin innovation.

The downside of this approach is that one may miss out on the opportunity to make large positively creative innovations due to the risk-averse approach. For example, governments may shy away from making radical economic reforms after the brunt of the COVID-19 pandemic, losing out on the opportunities to provide positively creative economic models.

### 6.3. Maximax

Finally, in this group, there is the maximax rule, which, as we use the term here, maximizes the maximum gain for affected parties. This is also known as the optimistic or risk-seeking strategy that seeks to achieve the best outcomes if the best happens. The obvious advantage is that, if someone does very well, perhaps multiple “someones”,



the gains are high. The disadvantage is that some people may not be benefited and even, potentially, may suffer terribly. Examples of this kind of outcome may include high-risk high-gain innovations. For example, in the aftermath of the COVID-19 pandemic, schools may decide to move to fully virtual schooling with innovative technological means. Great technology may enormously help students who have the technology available to them. However, such innovations may rely solely on technology and end up denying education to specific groups of students who have little or no home support, especially if the technology fails.

None of the philosophically oriented models come close to providing a basis for understanding and teaching about criteria for assessing positive creativity that will satisfy everyone. Another possibility is to consider psychological models.

## 7. Psychological Models

Another class of models derives from the work of psychologists studying creativity. These models might be applied to help explain positivity in creativity.

### 7.1. Four-C Model

Kaufman and Beghetto [50] presented a Four-C model of creativity, according to which creativity can be of any of four kinds: Mini-c—the kind of creativity used when one learns new things; little-c—the kind of creativity that is novel and useful to an individual or maybe to those in one's immediate circle; Pro-c—the kind of creativity that is novel and useful at a professional level; and Big-C—the kind of creativity that is novel and useful at a world level.

The model does not directly speak of positive or, for that matter, negative creativity. However, it could be seen as implying that an innovation could be positively creative at one level but neutral or negative at another level. For example, an article on ways of speeding up nuclear-fission reactions might be positive at the level of professional creativity—leading to innovations in developments of atomic energy—but ultimately negative at the world level in making it easier for a nation or, for that matter, terrorists, to explode an atomic bomb. Even at the little-c level, an idea that a group of people sees as novel, useful, and even good for bullying others, can be bad from the standpoint of those who are bullied. This framework emphasizes that social, cultural, and psychological influences need to be considered at the same time [51], which is also applicable to positive creativity.

### 7.2. Wise Creativity

Another perspective is that positive creativity is wise creativity; that is, creativity that serves a common good by balancing the interests of all affected parties, over the long- as well as the short-term, in a way that reflects positive ethical values [13–15]. On this view, positive creativity is at the intersection of creativity and wisdom.

An advantage of this criterion is, first, that many wisdom scholars include creativity as a construct overlapping with wisdom [52,53]. To that end, positive creativity establishes a clear connection between the two psychological constructs, wisdom and creativity. Creativity can be wise, less than wise, or even downright foolish, as when politicians try to use their creativity to thwart the will of the people who elected them. Second, it speaks of a common good, which specifies everyone's interests rather than the interests of specific groups only. Third, the criterion introduces the importance of positive ethical values. Fourth, the definition considers the long-term as well as the short-term, recognizing that what is good over the short-term is not always good over the long term, and vice versa. The most obvious shortcoming of the approach, of course, is that it does not specify what the common good is, although it is not clear that a single common good is ever specifiable. However, the approach also does not specify how to determine a common good, beyond seeking balance among parties, over the long and short terms, through the attainment of positive ethical values.

The ACCEL model [54,55] views positive creativity as creativity that makes a positive, meaningful, and enduring difference to the world—it makes the world better at some level

and seeks a common good; negative creativity makes the world a worse place; neutral creativity makes the world neither better nor worse [12–14,56]. Therefore, it may be seen as a variant of the view of positive creativity as wise creativity. The model recognizes that people have different views of what makes the world better or worse. In the United States, the Trump presidency made clear just how differently people could perceive one polarizing figure—either as doing great good or great harm [57].

## 8. Educating for Positive Creativity

After having reviewed several models that can inform what constitutes positive creativity, let us now turn our attention to how positive creativity can be taught in educational settings. Let us consider four central tenets of educating for positive creativity: (a) knowledge, (b) abilities and skills, (c) attitudes, and (d) behaviors.

### 8.1. Knowledge for Positive Creativity

To develop knowledge for positive creativity, educators can use several models, explained above, in teaching students about the different ways in which they can conceive of what makes creativity positive. Small group discussions, role plays, scenario-based case studies, and Socratic seminars on various issues about decision making regarding innovations could be used. For example, students may be asked to choose a model from the abovementioned list and apply it to a dilemma scenario. Discussion prompts could include “How do you evaluate a COVID-19 vaccine innovation using various philosophical models of what constitutes positive creativity? Should you consider the extent to which this innovation may benefit and harm different groups? Why? How?”

### 8.2. Abilities and Skills for Positive Creativity

Knowing what positive creativity means would not be sufficient. Teachers should also help students in developing abilities and skills that are fundamental to positive creativity. Besides general creativity abilities and skills, such as divergent thinking, idea generation, imagination, improvisation, and elaboration, teachers would need to develop the competencies required to make judgments about the positivity of the creation. These could include a range of decision-making skills, such as identifying the decision, gathering information, identifying alternatives, weighing the evidence, choosing among alternatives, taking action, and reviewing the decision. Critical thinking skills, such as deeper analysis, logical interpretation, inference building, evaluation, judgment, and reflection, will also be crucial to developing abilities and skills for positive creativity. Activities and exercises that integrate critical thinking and creative thinking would be useful in this regard. Sternberg and Karami [15] suggest using real-world problems to develop students’ positive creative thinking.

There have been good and solid programs that have sought to teach creative thinking [4,58–64]. These programs have shown some positive results. What we urge here is a focus not just on creativity, but rather on creativity that, in the long-term, is positive in its impact toward achieving a common good. We believe that this positive emphasis has been insufficiently present in past programs.

### 8.3. Attitudes for Positive Creativity

Creativity is an attitude toward life [65–67]. Therefore, developing students for meaningful positive creativity would need efforts that go beyond knowledge building and skill development. As positive creativity inherently requires individuals to assess their creations in the light of the greater good, educators should emphasize developing empathetic, compassionate, and prosocial attitudes. The prolonged practice of these underlying skills would help develop fertile attitudes for positive creativity. An example would be to inculcate the habit of assessing the environmental and social cost of students’ creations. A typical exercise could involve the regular reflective journaling of students’ thoughts about their creation and how it relates with others beyond their immediate circle of influence.

Students also need to learn basic creative attitudes [67], such as the need to (a) redefine problems, (b) persuade others of the validity and value of your ideas, (c) be resilient in the face of obstacles, (e) be willing to learn from mistakes, (f) take sensible risks, (g) defy the crowd, even when there is pressure to conform, and (h) be courageous when others seek to undermine one and one's ideas.

#### *8.4. Behaviors for Positive Creativity*

Ultimately, knowledge, abilities, skills, and attitudes for positive creativity should culminate in short-term and long-term behaviors that uphold positive creativity as a virtue—a value worth striving for through daily actions. Such actions could include a regular metacognitive exercise of assessing the impact of one's ideas and correcting one's behavior, as necessary. Incentivizing positive creative behaviors may also further promote similar behaviors in the future.

To that end, educators should role-model positive creative behaviors through their daily actions. They can do so by first reorienting their own attitudes toward creativity to be aligned with the ingredients of positive creativity, mainly, the purpose of any creation. Other ways include inviting role models to the class and studying biographies of eminent positively creative people, such as Mahatma Gandhi or Nelson Mandela. Most importantly, providing regular opportunities for creative problem solving and scaffolding creative positivity would enable students to practice positive creativity behaviors.

## **9. Conclusions**

Why should we teach for positive creativity? It turns out that, as we have tried to show in this article, creativity can be negative or neutral as well as positive [56] in its consequences. Social media could be considered a creative innovation but also to have many dark sides. Students need to learn to think long term, not just short term, about whether the creative innovations they will make, now and in the future, will change the world into a better place, or a worse one. Moreover, they need to think about the positivity of outcomes not just for themselves or for a particular interest group of which they are a member, but also for the common good.

The greatest challenge of teaching for positive creativity may be figuring out what “positive creativity” is. When our collaborators started working with us on the topic, we thought figuring this out would be relatively straightforward. We quickly found that that was not the case, and our explorations of what constitutes positive creativity actually led to this article.

The goal of teaching students for positive creativity is not to tell them what is positive or even what positive creativity constitutes. Rather, it is to help them develop their own notions about what positive creativity is and how to assess positivity. Then, one must help them figure out how to achieve positive creativity in their own lives. We hope that our article points the way toward helping students figure out a path to such an achievement.

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