Has the study of psychology provided any useful information? Discuss in relation to an area of your own choosing within education.

"We have often behaved as if the intelligence test represented an adequate sampling of all mental abilities and cognitive processes. Despite the already substantial and increasing literature regarding the intellectual functions closely allied to creativity, we still treat the latter concept as applicable only to performance in one of more of the arts to the exclusion of other types of achievement requiring inventiveness, originality and perfection."[1]

The study of psychology, of the human mind and its functions, is increasingly an inherent part of the study of education. If one takes 'learning' as the generally accepted purpose of education, Ronald A. Beghetto and Jonathan A. Plucker stipulate that this should be "true learning – that is, a deep understanding of content and process that allows the learner to use new information to solve unique problems,"[2] and that creativity has a large role to play in promoting this type of learning. Similarly, J.P. Guilford stated, "a creative act is an instance of learning... [and that] a comprehensive learning theory must take into account both insight and creative activity" (Guilford, 1950)[3].

Although psychologists' interest in education lay for a long time in the study of intelligence and IQ, there is a growing focus on the interrelation between intelligence, creativity and learning.[4] Psychologists and educators are becoming more aware of the manner in which educational systems tend to inherently discriminate against behaviour or thought that appear too divergent or different from the expected response. The aims of the educational psychology of creativity are therefore, according to John Houtz, to help educators understand the essential nature of creativity, identify it in themselves and in their students, and encourage creativity and creative attitudes.[5] In this essay I will discuss the three aims mentioned above, and conclude with an exploration of why the psychological study of creativity is so important for education.

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[1] Getzels and Jackson, assessment of creativity, 49
[2] Creativity and reason in cognitive development, 328
[3] Education and creativity, 317
[4] Creativity, intelligence and personality: a critical review of the scattered literature, 401
[5] The Educational psychology of creativity, 8

The first aim of the educational psychology of creativity, understanding what exactly creativity is (and, by extension, identifying it) is perhaps the hardest of them all, and is often seen as the biggest hindrance to the progression of the field.[6] J.A. Plucker and M.C. Makel suggest that the varying definitions of creativity leave those within the field feeling estranged from each other, and those outside the field distanced by the lack of a conclusive description.[7]

Creativity is often studied with relation to intelligence, one of the key fields of research in both psychology and education. Intelligence and creativity can theoretically be coincident, disjoint, overlapping but independent, or one can be a subset of the other (Sternberg & O'Hara, 1999).[8] Many theories and tests take creativity as a lower order factor of intelligence, including tests of Divergent Production, Guilford's Structure of Intellect test, and Carroll's 3-strata model. This would suggest that intelligence and creativity have a strong correlation. However, in order for this potential correlation to be useful for practical applications, psychologists need to know the nature of the correlation. Guilford (1967) proposed that this correlation would vary according to cognitive ability/intelligence. His work gave rise to the Threshold Hypothesis, which suggests that an above average, perhaps even high, level of intelligence is necessary (but not sufficient) for high creativity.[9]

The second prerequisite for analysing such a correlation is having a means to measure creativity. Divergent Thinking (DT) tests are aimed at encouraging the production of as original and as many ideas as possible in response to stimuli, and are a frequently used measure of creativity. These tests have come under criticism, as the widespread use of them (akin to substitution of 'IQ' for 'intelligence') meant that they began to be confused with creativity itself[10]. Perhaps the biggest limitation they created was the focus on fluency of ideas, whose "predominance [over originality] implicitly devalues the role of creativity in the solving of problems"[11]. The Creativity Quotient, proposed by Snyder, Mitchell, Bossomaier and Pallier (2004) attempts to factor in

[6] Creativity, intelligence and personality: a critical review of the scattered literature, 401
[7] Cambridge handbook of creativity: assessment of creativity, 48
[8] The relationship between intelligence and creativity: New support for the threshold hypothesis by means of empirical breakpoint detection
[9] The relationship between intelligence and creativity
[10] Creativity, intelligence and personality: a critical review of the scattered literature, 401
[11] Assessment of creativity, 55

flexibility as well as fluency when assessing DT responses[12], and this shift in understanding is providing DT tests with more reliability.

Jauk, Emanuel et al. (2013) conducted a study to investigate the Threshold Hypothesis, and tested the theory according to three different criteria for judging creativity, using two Divergent Thinking tests: Alternate Uses and Three Instances. It is important to note that psychologists have had to make a distinction within creativity between creative potential (the ability to create something novel and useful[13], or the processes that generate original and adaptive ideas, solutions and insights[14]) and creative achievement (the realisation of this potential in real-life accomplishments[15]). This is of relevance in the study of psychology and education because a threshold was found for creative potential, but not for creative achievement. This suggests that such psychological study cannot necessarily predict the eventual accomplishments or manifestations of an individual's creativity, but that it can help to understand an his/her potential to achieve them.

When creativity was judged purely quantitatively, based on the fluency of ideas, the threshold was 86.09 IQ points. When the criterion of ideational fluency was more liberal, for example producing 2 original ideas, the threshold rose to 104.00 points, and it rose further to 119.60 points when the criterion required several original ideas.

The discrepancies in these thresholds seem explainable by the idea that one needs more intelligence to produce a series of original ideas than one needs to produce just two, and that increasing the production of ideas – regardless of the quality – is the easiest, considering one has crossed the lowest threshold. Hence there is a lack of correlation between intelligence and ideational fluency above the threshold.

In response to studies that do not appear to show any thresholds, Batey and Furnham (2006) point to the fact that the sole indicator of creative potential used in these cases is ideational fluency. They state that one "must possess certain abilities over and above fluent DT to achieve success." Jauk et al. (2013) conclude that the threshold

[12] Assessment of creativity, 55
[13] The relationship between intelligence and creativity
[14] The Educational psychology of creativity, 25
[15] The relationship between intelligence and creativity

hypothesis does not suggest that a particular intellectual capacity is required in order to produce several ideas, of any quality, but that it is needed for the ideas produced to be creative.

Furthermore, above the 120-point threshold (taking the most demanding criterion of creativity), there was no correlation between IQ and creative potential. This finding was supported by further studies in both primary and secondary schools that found major differences between the correlation coefficients above and below the threshold (Fuchs-Beauchamp, Karnes and Johnson, 1993; and Yamamoto, 1964, respectively)[16].

Given that above the threshold intelligence ceases to be a predictor of creative potential, psychologists need to study the factors that do predict it, and research has focused on the personality correlates of creative potential. The most consistent and significant trait has been openness to experiences (Batey & Furnham, 2006)[17]. Openness is considered an investment trait relative to both creative potential and achievement (King, Walker and Broyles, 1996), in that it usually implies that the individual is imaginative and curious, traits that are beneficial for promoting creativity regardless of the domain.[18]

Ziegler, Danay, Heene, Asendorpf & Bühner (2012) conducted a longitudinal study which demonstrated that openness affected fluid intelligence, which in turn affected crystallised intelligence six years later.[19] Thus such a trait is proving beneficial to both creative potential and to crystallised intelligence. There is a further hypothesis (King et al. 1996) that the combination of high levels of intelligence and openness lead to high creative potential, which can in turn translate into high creative achievement.[20]

Other traits were found to be linked to creative potential, but they were more dependent on the domain in question, such as conscientiousness being correlated to scientific creativity, and emotional instability being correlated to artistic creativity (Batey

[16] The relationship between intelligence and creativity
[17] The relationship between intelligence and creativity
[18] The relationship between intelligence and creativity
[19] Openness, Fluid intelligence, and Crystallized Intelligence: Toward an Integrative Model, 3
[20] The relationship between intelligence and creativity

& Furnham, 2006)[21]. Interestingly, below the threshold, conscientiousness actually had an inverse correlation with creative potential and with self-reported ideational behaviour (Batey, Chamorro-Premuzic, and Furnham 2010). This can be explained by considering the negative effect that deliberation, a component of conscientiousness, has on ideational behaviour, by impeding a more spontaneous and divergent production of ideas. Feist (1998) found a lower level of conscientiousness in artists compared to non-artists, and a generally higher level of conscientiousness in scientists compared to non-scientists. However, within the domain of scientists, those who were more creative exhibited traits that were indicative of relatively lower levels of conscientiousness, such as a "direct expression of needs and psychopathic deviance."[22]Additionally, when analysing personality traits, conscientiousness should be taken independently of competence, which was found to have a positive correlation with ideational behaviour (Batey et al. 2010)[23].

Based on their study, Batey et al. (2010) suggest that, especially in lower-IQ groups, an inability to restrain impulses (influenced by low conscientiousness and high competence) could be characteristic of ideational behaviour or 'impulsive creativity'. For individuals with higher IQ, Cho et al. (2010) propose that high levels of openness facilitate the acquisition of broader general knowledge, which in turn promotes creativity. Similarly, Benedek et al. (2012) studied the differential effects of cognitive inhibition and intelligence on creativity, with the conclusion that inhibition/openness are correlated with the fluency of ideas, while intelligence/general knowledge are correlated with their originality, demonstrating that executive processes play a role in creative thought.[24] This was further supported by the findings of Carson, Peterson & Higgins (2003), which also suggested that individuals with higher creative ability demonstrated lower levels of latent inhibition.[25]

One can see a manifestation of the importance of openness and general knowledge in Mednick's (1962) associative basis of creative thinking. Mednick states that creative thinking arises from combining associative elements, and that the most

[21] The relationship between intelligence and creativity
[22] The relationship between intelligence and creativity
[23] The relationship between intelligence and creativity
[24] The relationship between intelligence and creativity
[25] Creativity, intelligence and personality: a critical review of the scattered literature, 390

creative processes/solutions involve the ideas that are the farthest from each other conceptually. He identifies less creative individuals as having a steep associative response hierarchy, with a limited range of ideas from which to respond to a stimulus or question. Conversely, more creative people have flatter associative response hierarchies, meaning that they have a high number of associations that can be evoked, and therefore a greater potential for different combinations, and a higher probability of producing creative combinations of ideas.[26] Guilford (1972) also highlights how essential the development of memory is for creativity, in terms of providing an individual with a wide range of information to draw from[27]. This suggests that educators, while ensuring that knowledge does not undermine flexibility in thinking (Sternberg and Lubart, 1991)[28] and allowing a freedom of ideas and information, should not consider creativity and crystallised knowledge/memorisation mutually exclusive.

While Mednick focuses on the range of ideas that can give rise to combinations, David and Sternberg (1984) draw attention to the importance of insight skills in creativity. Sternberg (2005) suggests that the cognitive processes of fluency, flexibility, originality and elaboration are inconsistent in terms of defining and assessing creativity. David and Sternberg (1984) define 'insight' as the process of distinguishing relevant and irrelevant information (selective encoding), forming links between new and existing knowledge (selective comparison) and the ability to piece together different bits of information in a way that is new and useful (selective combination). According to Sternberg (2005), novelty, unusualness and non-familiarity are the keys to creativity[29], which reflect Mednick's theory that the more disparate the ideas, the more creative the response.

Jauk et al. (2013) theorise that intelligence fosters creative potential through smart strategies (connected to insight), high cognitive control (connected to competence) and broad knowledge. Creative potential is, according to them, intelligence mediated by executive processes, such as cognitive inhibition and switching. They propose a system whereby effective executive processes enable effective retrieval

[26] Creativity, intelligence and personality: a critical review of the scattered literature, 373
[27] Education and creativity, 322
[28] Education and creativity, 323
[29] Thinking skills and creativity 3: Torrance Test of Creative Thinking: The question of its construct validity

from semantic knowledge (dependent on the steepness of the individual's response hierarchy), which inhibits the use of predominant/conventional responses, thereby allows access to distant and unconnected concepts, and results in combinations that produce creative ideas.[30]

Almeida and Prieto (2007) studied creativity as a cognitive characteristic and came to the following five conclusions that creativity is: 1) more associated with divergent than convergent thinking and production; 2) more an individual attribute than a universal or normative construct; 3) more related to insight and novelty than to learning and routine behaviour; 4) can be more characterised by problem-finding than by problem-solving; 5) and uses more remote than spontaneous or frequent ideational association[31] (this supports Jauk et al.'s above-mentioned system of producing creative ideas).

Davis (1992) analysed various studies on personality and creativity, and identified that characteristics of creative individuals as awareness of their creativity, originality, independence, risk-taking, personal energy, curiosity, humour, attraction to complexity and novelty, artistic sense, open-mindedness, need for privacy, and heightened perception.[32] Feist (1998) highlighted creative individuals' tendencies to be autonomous, introverted, open to new experiences, norm-doubting, self-confident, self-accepting, driven, ambitious, dominant, hostile and impulsive.[33] It is evident that there are numerous potential personality correlates to creativity, which would does not give educators an easily implementable answer as to how to identify and encourage creativity in their students. Plucker and Makel (2010) point out that there is growing evidence of the developmental nature of creative personality traits, with the greatest potential for change occurring in adolescence and young adulthood.[34] The implications for this from an education point of view are that, contrary to what some educators might believe, there is still a lot they can do to change their students' ways of thinking, even after primary school and the initial foundational period of learning.

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[30] The relationship between intelligence and creativity
[31] Thinking skills and creativity 3: Torrance Test of Creative Thinking: The question of its construct validity
[32] Cambridge handbook of creativity: assessment of creativity, 56
[33] Cambridge handbook of creativity: assessment of creativity, 56
[34] Cambridge handbook of creativity: assessment of creativity, 57

This leads on to the third goal of the educational psychology of creativity: encouraging creativity and creative attitudes. Firstly, in addition to studying the personality characteristics of creativity and the methods of implementation, one has to take into consideration the environment in which students and teachers are working, as this has immense psychological implications. As places such as schools and organisations are important sources of ideas and innovation, being in an environment that is conducive to creative processes is crucial. Torrance (1981) and Sternberg & Lubart (1991) specify a need for environments to spark, encourage the follow-up of, evaluate and reward creative ideas, and warn that schools and teachers very rarely meet those criteria.[35]

Amabile et al. (1996) conducted extensive research into what they refer to as "the psychological context of innovation – the work environment perceptions that can influence the level of creative behaviour displayed in the generation and early development of new products and processes."[36]

Although their work was aimed at the study of creativity in the adult working world, their findings can be applied to a school or another educational environment as well. They found that challenge, organisational encouragement, work support groups, supervisory encouragement, and organisational impediments were the most prominent factors in influencing creativity in a given environment. The factors of resources, workload pressures and freedom played a less important role.[37] These findings suggest that educators worried about the practicality of encouraging creativity in their classroom need not necessarily worry about their system having to be extremely liberal, with low workload and high levels of freedom, or needing vast resources. In addition to making a creative education system less daunting for educators, Fasko argues in favour of metacognition, teaching children themselves about the nature of creativity. He proposes that demystifying and making children more conscious of their own creativity would facilitate creative production.[38]

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[35] Education and creativity, 323
[36] Assessing the work environment for creativity, Academy of management journal, 1178
[37] Assessing the work environment for creativity, Academy of management journal, 1178
[38] Education and creativity, 318

Returning to the importance of combining remote/distant ideas, serendipity, similarity and mediation are, according to Mednick (1962) the key ways in which they are brought together. In an educational setting, mediation (combining idea X with idea Y because they are both associated with idea Z) could be stimulated and encouraged through tasks and problem-solving activities such as the Remote Associates Test (Mednick & Mednick, 1967), in which individuals must find a word to link three other words[39], or the Associations I task on Guilford's Structure of Intellect test, in which a word must be added in between two others such that two correct terms are formed.

One might argue that much of education revolves around problem solving, and coming up with a creative solution requires some level of problem restructuring (Jacobs and Dominowski, 1981).[40] However not all people may have an equal cognitive disposition to such an approach. Martinsen (1995) identifies 'assimilators,' and 'explorers' and suggests that explorers are more likely to seek new solutions to problems. In order to obtain the most effective problem solving, Martinsen proposes pairing assimilators with problems with which they have had a high level of relevant experience, and explorers with problems with a high degree of novelty.[41] As openness to novelty is considered a strong factor of creativity, this theory is particularly useful to educators in creating a structure and work that are conducive to encouraging creativity in their students who are 'explorers'. It also supports Amabile and Prieto's (2007) third conclusion about creativity: that is more related to insight and novelty than to learning and routine behaviour. It has limited implications, however, for how to promote creativity in all individuals.

One theory that does, however, have potential implications for all individuals is a counter-argument to the predominance of problem solving in education, proposing that equal if not more attention should be paid to problem finding (supporting Amabile and Prieto's (2007) fourth conclusion, that problem finding is more characteristic of creativity than problem solving is). Runco and Nemiro argue that knowledge and motivation are important for creativity, and that motivation – specifically intrinsic motivation – would be enhanced by engaging in the more meaningful task of problem

[39] Creativity, intelligence and personality: a critical review of the scattered literature, 373
[40] Education and creativity, 318
[41] Education and creativity, 318

finding.[42] This is linked to the inquiry-discovery approach, a method of indirect teaching (Treffinger, 1980). According to this approach, the act of discovery, of having to manipulate the environment and produce new ideas, contributes strongly to creativity. The role of the educator is to provide experiences and sources that spark inquiry, supply sources to answer questions, encourage manipulation and experimentation, allow discussion, exploration and failure, provide guidance and reinforcement for hypotheses and create a positive learning and interacting environment.[43]

The study of motivation itself is crucial too, with research focusing on the difference between intrinsic and extrinsic motivation. Runco and Chand's (1995) model of the interactions between cognitive processes and creativity demonstrates the role of motivation. According to their theory, knowledge is needed for reasoning, and motivation for creative thinking. Problem finding (a product of cognitive processes and perhaps reasoning) influences intrinsic motivation, which in turn supports creativity.[44]

The Intrinsic Motivation of Creativity principle (Hennessy and Amabile, 1987) posits that intrinsic motivation and creativity are very dependent on an individual's situation and state, and that they can be undermined by extrinsic motivation or constraints.[45] When children are aware of/expecting an evaluation, or are being observed, their motivation becomes more extrinsic and can narrow their thought process (Hennessey & Amabile, 1987)[46] Grading systems inherently propagate in students this kind of outlook on their work, and students can sometimes be hesitant to take risks with their ideas, as teachers do not always award good grades to creative responses (Sternberg & Lubart 1991)[47].

A survey of 16 female primary school teachers, although limited in its scope, revealed negative attitudes towards characteristics such as non-conformity and autonomy that are linked to creativity (Westby & Dawson, 1995)[48]. Even if students can adapt their thought processes and adopt more creative approaches during adolescence,

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[42] Education and creativity, 318
[43] Education and creativity, 321
[44] Creativity and reason in cognitive development, 166
[45] Education and creativity, 319
[46] Education and creativity, 323
[47] Education and creativity, 323
[48] Education and creativity, 325

no changes can be made without a reflection of these attitudes in the teachers themselves. Although educational programs do need to take into account practicality and the needs of the teacher, the research points to the need for educators to shift the emphasis from satisfying a predetermined, teacher-driven response, to satisfying an intrinsic desire to complete a task in the best possible way.

Intrinsic motivation can be enhanced through teachers valuing students' independence, being intrinsically motivated themselves, and through having a warm presence. Deci et al.'s (1981) research suggests that a belief in autonomy promotes curiosity, an affinity for challenges, and a desire to independently solve/complete their work. Teachers perceived as intrinsically motivated can result in students feeling more competent and intrinsically motivated, and those perceived as warm have been shown to inspire more motivation and creativity (Ryan & Grolnik, 1986)[49]

Additionally, Hennessey et al. (1989) have suggested that it is possible to 'protect' creativity by, in a sense, immunising students to extrinsic motivation and the expectation of rewards. Their intrinsic motivation training involves showing students a video of children of the same age, discussing the intrinsically motivating aspects of their task, such as how exciting, interesting or fun it is.[50] Although this has not had conclusive results, it demonstrates the potential for efforts to reverse the natural motivational tendencies in schools. Effective models for incorporating creativity into curricula are especially important in poorer, more culturally diverse schools, which, as a result of external accountability mandates, have increasingly narrow curricula.[51] It is as though extrinsic motivation is stifling the creativity of the schools themselves.

It is challenging, however, for educators to assess and measure creativity. In the absence of planned, controlled studies, i.e. in a classroom, it is easy to resort to using ideational fluency as a tangible gauge of creativity, especially in tasks that are similar to DT tests. Because of the nature of such exercises, often done in groups, extroverts tend to thrive on the stimulation, taking risks (Eysenck & Sysenck, 1985), and the chance to participate actively, due to their neurobiological predisposition. When evaluating

[49] The Educational psychology of creativity, 213
[50] Creativity in the classroom, 457
[51] Creativity in the classroom, 459

responses solely based on fluency, which an extroverted individual is likely to excel at, it is not possible to distinguish between the different levels of openness of each individual. Educators should try, as much as possible, to avoid this form of assessment as it risks disregarding or disadvantaging students who might be less extroverted than others.

Three of the American Psychology Association's Learner-Centred Psychological Principles (1993) seem to summarise well the ideas of this section. They highlight the importance of strategic thinking in problem solving; the need for thinking about thinking and learning in order to facilitate creative and critical thinking; and that novelty and authentic learning tasks (using realistic instead of trivial problems) stimulate intrinsic motivation, creativity and higher-order thinking.[52]

Considering the challenges and complexities posed by studying, identifying and encouraging creativity, psychologists and educators need justification for pursuing it. Creative teaching and learning have been found to be associated with improved motivation, alertness, curiosity, concentration and achievement (Torrance 1981) and high English achievement scores (McCabe, 1991). [53]

Studies of creativity have shown it has concrete benefits across all the age groups and school years. A study involving year 4 and year 9 students, from both low-income and mid-upper class families, from Maryland and California (thus incorporating a range of ages, backgrounds and environments) evaluated their learning of social studies depending on three different teaching techniques: no intervention, with a focus on memory; a focus on critical/analytical thinking; and a focus on analytical, creative and practical thinking. They were all tested for both memory, and for analytical, creative and practical thinking.

The students with the broadest teaching outperformed the others in both types of assessment, demonstrating that teaching creative, practical and analytical thinking is the most effective method, even if the teacher's goal is simply for the students to remember information. It enables children to balance out their strengths and

[52] Education and creativity, 319
[53] Education and creativity, 320

weaknesses, and opens a broad range of ways in which they can approach and process material (Sternberg et al. 1998 a & b).[54]

In middle school and high school students, a study was conducted on the teaching of reading (Grigorenko et al 2002). It was taught practically, analytically, creatively, or just normally, and the techniques were either applied explicitly (in the case of the middle school students), or incorporated into the curriculum of all subjects (in the high school students). The students who were taught using the expanded approach significantly outperformed the students who learned reading in the standard way.[55]

Although much of the research and discourse centres on primary and secondary education, those in the higher education sector also stand to gain from the encouragement of creativity. A study of college students' creativity (using Guilford's Structure of Intellect model) over two years compared those who took part in a creativity course with those who didn't. Those who completed the course performed much better in terms of fluency, flexibility, evaluating ideas, preventing coping with real-life situational tests and problems in college and applying their creativity in English courses. Additionally, they felt the program had helped them in their other courses, they demonstrated more improvement from year to year, and performed better in non-academic activities that required creativity (Parnes & Noller, 1972).[56]

One of the key questions when justifying a shift in educational approaches towards creativity is what the effect is of schools discriminating against students who work with a more creative or practical approach, and favouring students with better memory and analytical skills. Sternberg et al. (1995) examined gifted high school students who were selected for a college-level psychology summer program, and fell into one of five categories: high analytical, high creative, high practical, high balanced (high in all three) or love balanced (low in all three). They were all taught using the same content, had the same morning classes, and were evaluated using the same tasks and criteria (analytical, creative and practical).

[54] The Nature of Creativity, 93
[55] The Nature of Creativity, 93
[56] Education and creativity, 324

The one variation in their course was an afternoon session whose instruction focused on either memory, analytical, creative or practical approaches. Some students were in sessions that matched their innate ability, while others were mismatched. In each of the assessments, the results were predicted by at least two of the ability measures, one of which was always the analytical score. Sternberg et al. highlight this as a demonstration of why an analytical approach is so readily ingrained in teaching methods, and the challenge of reducing the emphasis on it.

Unsurprisingly, the students who were placed in a session that did not align with their innate abilities didn't perform as well as those whose sessions did. Sternberg et al. point out that in the majority of schools, teaching methods and assessment very rarely match the abilities of students with creative or practical tendencies leading, leading to a vicious cycle of them being disadvantaged every year in comparison with their more memory- and analytically-skilled peers.[57]

This study also had broader societal implications with regards to perceived correlations between status and intelligence. The researchers found much greater racial, ethnic, socioeconomic and educational diversity in the high creative and high practical groups than in the high-analytical group.[58] Taking a view of intelligence that incorporates different skill sets changes the assumptions made about intelligence, and also allows the discovery of intellectual strengths that might otherwise, using conventional testing, have gone entirely unrecognised.

Sternberg, in The Nature of Creativity, outlines effectively the problem and goals educators are faced with today:

"Creativity is as much a decision about and an attitude toward life as it is a matter of ability. Creativity is often obvious in young children, but it may be harder to find in older children and adults because their creative potential has been suppressed by a society that encourages intellectual conformity."

[57] The Nature of Creativity, 93
[58] The Nature of Creativity, 93

Creativity, although controversial, is intrinsically linked to our cognitive processes, our intelligence, our memory, our ideas, our personal and social skills, our achievements – academic or otherwise – and the functioning of our society. The fact that it is difficult to identify or measure does not imply that its existence and impact are negligible, and far from rejecting the study of creativity due to its ambiguity, psychologists and educators should continue to explore the field.

The psychological study of creativity has already provided the field of education with innumerable helpful theories, practices and understandings of how we learn and develop. Further research is needed to clarify the relationship between creativity and learning, and to develop, test and implement models that encourage both creative potential and academic achievement, while taking into account the practical needs of the teacher and school. The influence of the environment is being further examined, and hopefully this will become a more integral component of planning educational systems.

Perhaps the motivation to better understand and encourage creativity should itself be intrinsic, as opposed to being suppressed by extrinsic motivations like the need conclusive scientific results, clear-cut answers and models, and more immediate or tangible proof. As demonstrated in teachers, it is by adopting such approaches oneself that one achieves the greatest effect on one's students, or in this case, on society and the discipline of education as a whole.