



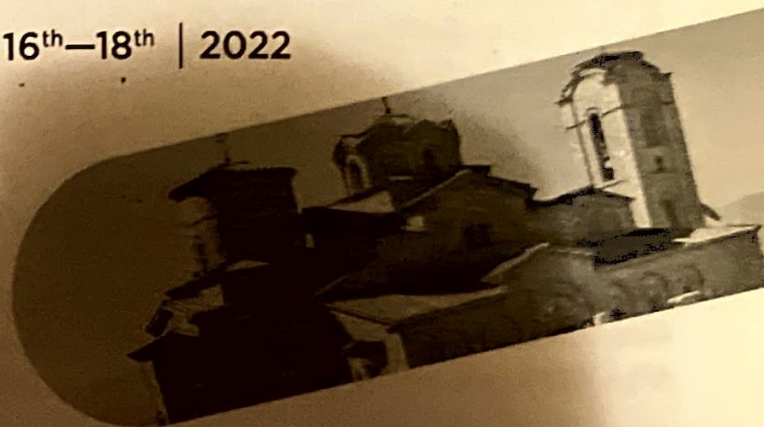
**ИНСТИТУТ
ЗА ПЕДАГОГИЈА**



INTERNATIONAL SCIENTIFIC CONFERENCE

**75th Anniversary of the Institute of Pedagogy -
Educational Challenges and Future Prospects**

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CONFERENCE PROCEEDINGS

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Foreword

The International Scientific Conference entitled “75th Anniversary of the Institute of Pedagogy – Educational Challenges and Future Prospects” was organized by the Institute of Pedagogy, one of the oldest institutes at the Faculty of Philosophy, Ss. Cyril and Methodius University in Skopje, for the occasion of the significant jubilee of its foundation.

The Conference was organized under the patronage of the President of the Republic of North Macedonia Prof. Dr. Stevo Pendarovski. It took place in Hotel Inex Olgica in Ohrid, from 16th to 18th May 2022.

The aim of the Conference was to attract attention to the activities of our institute, and to bring together academics, educational experts, researchers, educators, practitioners and students from various countries. After the period of isolation due to the pandemic, the Conference was a great opportunity to make retrospective of recent developments in educational theory, legislative and practice, to discuss actual issues in all areas of education, to promote new concepts and ideas and to disseminate results of innovative research and knowledge accomplishments. We are grateful for the interest of almost 200 authors from 21 countries to participate in our conference and to contribute to its success.

The book with conference proceedings contains 84 peer reviewed academic papers from 14 authors that are organized alphabetically according to the last name of the first author. The welcome speeches of our honored guests who speak at the opening ceremony are also included at the beginning of the book.

We would like to thank all institutions and companies for their support and sponsorship organization of the conference. Only with joint efforts and cooperation and with exchanging our professional experience and expertise, we can provide quality education as our children and next generations deserve.

Many thanks to the members of the editorial board who helped us in preparation and publishing of the book.

With respect,

President of the Organizing Committee
Prof. Dr. Elizabeta Tomevska-Ilievska

President of the Programme Committee
Prof. Dr. Natasha Angeloska-Galeva

We assume that the unequal studied population by gender /144 of females and 10 of males / has influenced the fact that no other significant differences are found between the surveyed students of both sexes. The limited range of our respondents on the indicator "age" / 96% are aged between 19 and 22 years, and 90% – between 19 and 20 years / is one of the reasons why the correlation analysis of the studied scales does not reveal links between the age of the students and the studied constructs.

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JEROME BRUNER ON LITERATURE: CONCERNING THE IMPORTANCE OF NARRATIVES FOR EDUCATION

Abstract: In this paper, we are going to discuss the status that the cognitive psychologist and pedagogue Jerome Bruner gives to narratives (stories) and literature, especially the part that he thinks that they should play in the process of education. In the first part of the paper, we are going to discuss Bruner's important distinction between the *paradigmatic* (or *logico-scientific*) and the *narrative* modes of thinking and knowing. In the second part, we are going to clarify this distinction furthermore, and we will discuss the specifics of the narrative mode of knowing, especially the important part that stories play in the subject's construction of the worldview and his idea of the self. We will also discuss the importance of literature in the context of the narrative mode of knowing and thinking. In the third part, we will delve deeper at the importance that Bruner gives to literature, talk about what, according to him, are its benefits, and how literature can be better implemented in the process of education. In writing this paper we will consult Bruner's extensive literature, but we will mainly focus on the following books: *On Knowing: Essays for the Left Hand* (1979), *Actual Minds, Possible Worlds* (1985), *Culture of Education* (1996) and *Making Stories: Law, Literature, Life* (2002).

Keywords: Narrative, Story, Literature, Education, Learning

Introduction: A Child's Need for Stories...

At the end of *The Book of Memories* (the second part of his essayistic memoir *The Invention of Solitude*) Paul Auster gives the following remark concerning the relationship between children and stories:

It is said that a man would go mad if he could not dream at night. In the same way, if a child is not allowed to enter the imaginary, he will never come to grips with the real. A child's need for stories is as fundamental as his need for food, and it manifests itself in the same way a hunger does. (Auster 2012: 165)

...specific intuition that can be found in (good) works of literature, crystallizes the problem which we are going to elaborate on in this paper with great economy and precision. We know by intuition that stories are necessary, as fundamental for the child's "need for food"; from the earliest age to the highest levels of education, children are "hungry" for stories. We also know that stories are useful in some way, and that they have been a part of a child's education from the downs of civilization; and that the imaginary is a necessary precondition for the construction of the real – not only a "supplement" or a "decoration", but a *sine qua non*. Why?

We are not going to find the answer to this question by intuition, without an in-depth analysis of the complex relationship between people, stories, and education, and for that we need to turn our attention to scientific discourse (intuition is helpful, but only in the beginning, while we need to formulate the problem concisely¹⁵). What is going to help us is the work of the American pedagogue and cognitive psychologist Jerome Bruner, because his work in the late seventies (*On Knowing: Essays for the Left Hand*, 1979), eighties and nineties (*Actual Minds, Possible Worlds*, 1985; *Acts of Meaning*, 1990; *Culture of Education*, 1996), and up until the early years of the new millennium (*Making Stories: Law, Literature, Life*, 2003) provides in-depth and interdisciplinary analysis (the only way possible, according to Bruner¹⁶) of the problems that concern us. It is, as we've forgotten, says Bruner, that the narrative mode of the construction of reality is fundamental for our functioning in the world and in society. Our deepest and most precious values and convictions are reflected in our stories, and with their help, we structure our time and conceive history, we articulate our own and the lives of others, and we imagine other people's minds. We use stories so we can cope with the unexpected in life, with failed plans and expectations gone wrong. They give us conventionalized wisdom about what we can expect, they orient our worldviews and give meaning to our actions. Simply stated, stories makes us *beings-in-the-world*; without them, we would be lost and disoriented. (Bruner 2002:31)

Then why, asks Bruner – in *The Uses of Story* – "do we fob Pythagoras of on eight-graders but never breathe a word to them about Aristotle on narrative?" (Bruner 2002: 5) Meaning why, conventionally, and generally, the approach to the narrative mode in most of our school – the approach to poems, drama, *belles-lettres*, theater etc. – is ground on the premise that they are some kind of sophisticated decoration, a supplement, as we already said, but not a necessity, as Austerlitz concisely remarks? That narratives are something that beautifies free time and makes life more interesting, but not something as fundamental as mathematics or science?¹⁷

There are a lot of answers to Bruner's quasi-rhetorical question, answered and elaborated in many books, all from different sciences and scientific disciplines. But what concerns us in this

¹⁵ In *Essays from the Left Hand* Bruner gives the following definition of intuition: "Intuition implies the act of grasping the meaning or significance or structure of a problem without explicit reliance on the analytic apparatus of one's craft. It is the intuitive mode that yields hypotheses quickly and produces interesting combinations of ideas before their worth is known. It precedes proof; indeed, it is what the techniques of analysis and proof are designed to test and check". (Bruner 1997: 102)

¹⁶ In the Acknowledgments to *Acts of Meaning*, Bruner states the following in relation to the *Center for Cognitive Studies* and interdisciplinarity: "I mention it here only to express a debt to yet another community that helped convince me (by this time hardly against my will) that the boundaries that separated such fields as psychology, anthropology, linguistics, and philosophy were matters of administrative convenience rather than of intellectual substance." (Bruner 1990: XVI)

¹⁷ In the chapter *So Why Narrative*, a part of his last book *Making Stories: Law, Literature, Life*, Bruner decidedly writes that without narratives, we would be literally lost and disoriented. If we couldn't tell stories about ourselves, and stories in general, our idea of selfhood could not exist. From a medical and physiological point of view, he mentions a clinical manifestation called *dysnarrativia*, which presents itself as the inability to tell or understand stories, or in general, a manifestation that describes how the brain organizes the world. It is commonly associated with Alzheimer's disease and with Korsakoff's syndrome. Another important type of *dysnarrativia* manifests as the inability to understand the sense of oneself, but also the sense of others. (Bruner 2003: 100)

paper – and what concerns Bruner in his books – is why the theory of *peripetia*, as we teach Pythagoras to eight-graders). Why narratives and the theory of narratives must have a bigger part in education, as they are a huge part of folk-psychology and our everyday lives. What are the benefits of stories – of hearing, telling, and learning about them – of knowing a lot of stories (having a big “repertoire”), and knowing about stories, about their structure and rules? To answer all these questions, first, we must consider the narrative impulse, which is an invariant in human nature. So, in the first part of this paper, we are going to analyze how we – as subjects – use narratives to construct reality, according to Bruner, but also the scientific side of talking about stories. In the second part, we are going to elaborate on Bruner’s conception of this mode (the narrative mode) and its place in education. We are going to finish this paper with a conclusion that sums up our findings.

The Two Modes of Knowing

“There appears to be two broad ways in which human beings organize and manage their knowledge of the world, indeed structure even their immediate experience”, writes Bruner in his essay *Culture, Mind and Education*, establishing the foundations of his theory of the narratives:

One seems more specialized for treating of physical “things”, the other for treating of people and their plights. These are conventionally known as *logical-scientific* thinking and narrative thinking. Their universality suggests that they have their roots in the human genome or that they are... givens in the nature of language. They have varied modes of expression in different cultures, which also cultivate them differently. No culture is without both of them, though different cultures privilege them differently. (Bruner 1999: 39–40)

Although most clearly articulated in the book *Culture of Education*, the issue of this division of human existence and cognition has been of interest to Bruner since the collection of essays entitled *On Knowing: Essays for the Left Hand and Actual Mind, Possible Worlds*. In the second work, he makes a distinction between these two modes of knowledge and existence using concrete examples. The first mode – the *logico-scientific* or *paradigmatic* – strives for the ideal and purely formal mathematical system of description and explication. It operates by categorizing and conceptualizing the elements in a coherent, homogenous system, and bases itself on logical and scientific procedures such as conjugation and disjunction, hyperonymy and hyponymy, strict implication, etc. It is a language that rests on the premises of consistency and non-contradiction, and creates good theory, analysis, logical proof, solid argument, and empirical research guided by stable hypotheses. The second mode – the one which interests us in this paper – i.e., the narrative mode of representation and construction of reality, aims at good stories, gripping drama, and believable (though not necessarily “true”) historical accounts. Also, the human, or human-like intentions and actions and complications and consequences that emerge from them are central to this mode. Bruner refers to the famous literary theories about the narrative mode, Bruner refers to the famous literary theories who says that narrative is built upon concern for the modes – or the “two cultures” – of knowledge, or the “two cultures” of knowledge.

– the two of them intertwined from the beginning to the end (Bruner 2002: 27). Narrating presupposes knowing and knowing narrating. With the help of narratives, we establish the structural background of reality. “We seem to construct stories of the real world, so called, much as we construct fictional ones: the same forming rules, the same narrative structures”, writes Bruner.

We simply do not know, nor will we ever, whether we learn about narrative from life or life from narrative: probably both. But nobody questions that learning the subtleties of narratives is one of the primer routes to thinking about life – much as a grasp of the associative, commutative, and distributive rules helps us grasp what algebraic thinking is. (Bruner 1999: 94)

Furthermore, it must be emphasized that while narrative modes of knowledge are clearly different from the *logico-scientific* modes of thinking, that doesn't mean that they are an arbitrary and chaotic phenomenon. Stories are subject to rules and laws, just like mathematics, logic, physics, and other “hard sciences”. In the essay *The Narrative Construal of Reality* (in the book *Culture of Education*) Bruner demonstrates nine such “universals of narrative realities”: 1. Every story establishes a *structure of committed time*; it doesn't organize its time by seconds or hours (as societies do), or by a metronome, it does so by “the unfolding of crucial events”, i.e., beginning, middle and end, determined by the meanings assigned to the events or the perceptions of the agents in the narrative. 2. *Generic particularity*: every narrative falls under a genre or type, because each story is reminiscent of another – It can be comic, tragic, farcical, satirical, sentimental, ironic, etc. 3. In stories, unlike the “real world” (the material world as it is), *actions have reasons* – in contrast to the naked meaninglessness, the narrative reality is always meaningful. It gets its motivation from the convictions, beliefs, and values or other “intentional states” (*phenomenologically speaking*) of the author or the genre. 4. Narratives by rule have a *hermeneutic composition*, meaning that the significance of the “text” comes from the complex interdependence of the part and the whole (i.e., the “hermeneutical circle”). 5. All stories are constructed on the state of *implicit canonicity*, to which they are referring positively or negatively, either being subservient to it, or being opposed to it. 6. The significance of the narratives is always open to interpretation because of its *ambiguity of reference*. 7. *The centrality of trouble*: stories are always about broken rules or planes gone awry, they are oriented around unusual things and adventures. 8. The relationship between the reader and the story is based on *inherent negotiability*, concerning the places where fiction starts and reality ends, or *vice versa*. 9. *The historical extensibility of narrative*: every story has a nearly limitless possibility for the widening and integration of events, characters, or themes. (Bruner 1999: 133-147) What is obvious and doesn't need to be emphasized is that all these aspects are valid not only for the world of fiction, but also for the world of real people and real events. We structure our life-stories in this way, always obeying these nine universal rules.

Bruner, in many of his books, notes that children enter narratives quite quickly, from a very early age. Before the start of their formal education, they know a lot about stories, even before they can fully comprehend them, or before they can tell and retell them themselves. “We seem, then, to have some predispositions, some core knowledge about narrative from the start”, writes Bruner in *The Uses of Story*. (Bruner 2002: 33) The origin of this predisposition comes mainly from the fact that people are inherently social and cultural beings. The socio-cultural context (“folk psychology”, in Bruner's terms) feeds us with stories from our earliest years, stories that come from the cultural tradition/s, and which immediately become our primary templates for experience. They structure both our private and our public experience of life, being crystalized by culture in a shared set of symbols. Society and social life as we know it wouldn't be possible

without stories. In other words, children will listen and learn a single day at school, because they are an integral part of the culture and the society. The myths and histories of the nation they were born in, as well as the folk tales of tradition passed down from their ancestors are the most obvious example of this. Through them, they get their sense of selfhood, tradition, culture, nationality, i.e., everything that they are, but also everything that they can become. (Bruner 1990: 80; Bruner 2002: 34)

When we outline the basic aspects of the narrative mode, the connection between stories and education becomes apparent. Children have no choice but to participate in the world of narratives. With their entry into language and culture, they immediately start swimming in the endless ocean of stories – an ocean which is nothing other than culture itself, the structure of society. From this point of view, the choice is obvious: either we let children learn to orient themselves in this world of narratives without the knowledge or skills which can help them get a sense of orientation or critical distance; or we ensure we teach and equip them, systematically, from an early age, to have a critical and enlightened attitude *a propos* the stories they hear, the culture they have, and the society they live in.¹⁸

Narrative and/in Education

"It has always been tacitly assumed that narrative skill comes *naturally*, that it does not have to be taught. But a closer look shows this not to be true at all", decisively observes Bruner, emphasizing that although we are naturally predisposed to function in the narrative mode, the skill, the ability to use that mode, does not develop spontaneously and beyond (or out of) the broader context of our lives. Bruner observes decisively, emphasizing that although we are naturally predisposed to function in the narrative mode, the skill, the ability to use that mode does not develop spontaneously and beyond the broader contexts of our lives. We know, he writes, that narrative dexterity goes through many different stages (that it can be developed and upgraded): that it can be seriously damaged or impaired as a consequence of brain damage of a certain kind; that it doesn't work well under stress, and that it ends up in literalism in one social community (that goes against the inherent ambiguity of the meaning in narratives), while becoming fanciful in another one with a different tradition (it splits up from material reality and any kind of social relevancy completely, and ends up as pure fancy). Also, it is obvious that some individuals show greater talent or prowess at constructing good stories: writers obviously, but also law students or lawyers, psychologists, teachers, even doctors – all of them have learned how to make a story believable and worth thinking about. While nobody can't tell for sure what we should do to increase "narrative sensibility" in a person, however, two very obvious premises can be observed: Firstly, that the child or the young person can know himself (or herself), his identity and culture, if he gets to know and feel the myths, history, folk tales, and all other narratives of his culture (or cultures). Secondly, it has been known for some time that the imagination is nurtured with the help of fictional stories: finding yourself in the world, in society, in a particular culture – while it is a consequence of family or societal institutions – it is mainly an act of the imagination. Belles-lettres, drama, poetry lead to the possible – not only as a helping tool for the child

¹⁸ In the conclusion of the third chapter (*Entry into Meaning*) of the book *Aspects of Meaning*, Bruner writes that: "... our capacity to render experience in terms of narrative is not just child's play, but an instrument for making meaning that dominates much of life in culture – from soliloquies at bedtime to the weighting off testimony in our legal system... Our sense of the normative is nourished in narrative, but so is our sense of breach and of exception. Stories make 'reality' a mitigated reality. Children, I think, are predisposed naturally and by circumstance to start their narrative careers in that spirit. And we equip them with models and procedural tool kits for perfecting those skills. Without those skills we could never endure the conflicts and contradictions that social life generates. We need them for the life of culture." (Bruner 1990: 97)

in finding himself (or herself) in the world as it is in the present but also as a way of creating a place for itself in the world as it can be in the future. (1999: 40-43)

One of the first tasks of a "narrative education" would be to get the students acquainted with as many narratives as possible. Every student should learn as many stories as he can, so that he can have a broader view of the possible. The variety of stories and the variety of ways they can be told would broaden the students' understanding of reality. They would learn more about the world, about society, and about themselves. On the other hand, they would also get to learn new ways of being in the world (alternative "life forms") – because literature, in the general sense, is the factory of the possible – but also ways to change the world. This, simply said, is the first quantitative task of education in relation to narratives.

"We live in a sea of stories", writes Bruner in *The Culture of Education*,

And like the fish who (according to the proverb) will be the last to discover water, we have our own difficulties grasping what it is like to swim in stories. It is not that we lack competence in creating our narrative accounts of reality – far from it. We are, if anything, too expert. Our problem, rather, is achieving consciousness of what we so easily do automatically, the ancient problem of *prise de conscience*. (Bruner (1999: 147)

With this statement, we delve deeper into the connections that exist between education and narrative. The "narrative education" cannot stop at the "ordinary" acquaintance, and quantitative multiplication of empirical samples (listening to more folk tales, adopting more historical examples, following examples from the domains of poetry, prose, and drama). The quantitative aspect is not enough. The more profound goal of education is to bring to the forefront of our minds, to wake up in a way, what we do automatically – because the narrative mode is so natural and integrated with our everyday experience, that most of the time we don't take notice of it. In other words, to have us reflect on the possibilities and the presuppositions of the narrative creation *per se*: from its *praxis*, to its *theoria*. That's the true meaning of Bruner's rhetorical question – why we teach Pythagoras to eight-graders, but not Aristotle.

Bruner lists several ways in which this can be achieved. The first one is by *contrast*: the classical example of this method is listening or reading the same story told by two speakers or two opposite points of view. This will make students think about how two observers or participants in the same event might see it in a completely opposite way, or at least differently. That is a good starting point for a more profound, but nevertheless very concrete discussion concerning the nature of reality itself, the distinction between subject and object, story, and plot etc. The second way is by *confrontation*, which is, in essence, by thwarting the listener's or the reader's expectations. By having their expectations betrayed, students get a better grip of the dynamic of what Freud calls the *pleasure* and the *reality principles*. In other words, their expectations about the narrative were betrayed: they were expecting something to happen in a particular way, but something completely different happened, something that they weren't expecting at all. The third way is the most complex, but also the most profound, and it is called *metacognition*. Metacognition is in fact an in-depth reflection, a turning backwards and inwards towards thought itself and thinking itself, and specifically – in the case of narratives – towards the codes and the procedures we use when telling or listening to stories. It is, simply, thinking about thinking, and thinking about stories in general, which is a first and very important step towards compromising and thinking together with other people. By employing metacognition, for example, students can start to ask questions about contrasting stories in a deeper way – why are the two subjects looking at or experiencing the same event in two different ways? Or asking more acute questions about confrontation – why expectations were set in that particular way or why did I feel betrayed when the plot or the *denouement* happened in this and not that way etc. (Bruner 1999: 147-149)

Teaching narrative literacy, then, comes down to two activities. The first is based on equipping children/students with the necessary symbolic systems, which is basically the primary acquisition of as large and as diverse a number of narratives as possible, regardless of the form or the genre: myths, folk tales, poetry, prose, drama, etc. This is the quantitative aspect of narrative education. The second, more complex, qualitative part, is becoming conscious of the universal rules of the narrative: the transformation of the student's point of view from empirical to critical (in the Kantian sense of the term). It may sound abstract, when it is said in abstract language, but Bruner's examples (*contrast, confrontation, metacognition*) show us that it is something very practical and applicable.

Bruner mentions one more aspect that is relevant for teaching narrative competences. Every society, every culture, can have a "breakdown", a crisis which is in many ways a disagreement about stories, or when the narrative impulse is numbed. The reasons for this can be various, but Bruner lists three that seem central to him in his book *Aspects of Meaning*: 1. When there is a serious disagreement about what is ordinary and canonical in a particular culture, in fact, when there are disagreements about the fundamental mythical and historical stories on which the cultural and political reality of a group of people is based. 2. The second problem comes from what Bruner calls, "the rhetorical overspecialization of the narrative", when stories (private or public) become overly ideological, banal, and self-serving, so that people stop taking them seriously: they see them as obvious lies or counterfeits. This happens, for example, in totalitarian regimes, as described in Milan Kundera's or Danilo Kis's novels. 3. When there is a "sheer impoverishment of narrative resources" – in the lowest classes of society (ghettos, sub-proletariat etc.), when the worst-scenario stories are so dominant that the sense of the possible is almost extinguished or swallowed by the actual material and economic circumstances. (Bruner 1990: 96-97) At times like that, we can notice, as Bruner emphasized on several occasions, that not all stories are of the same quality. One of the main tasks of education would be to teach its students to be critical of bad narratives, especially when breakdowns happen. Also, to show them that there are necessary material and societal preconditions for a story to actually come to be, and a sense of the possible which is not extinguished by the sense of a complete ending.

From this point of view, teaching narrative sensibilities is not only knowing a large number of stories; nor is it only knowing narratology and literary theory; it is also a capability of sensing and recognizing those specific moments when your culture is in crises, when there is a breakdown in the narrative impulse, when stories are being falsified and bad stories are the rule and not the exception, and where the necessary material conditions for imagining the possible are prone to be extinguished. That is why Bruner's conclusion concerning the relations between narratives and education is intentionally general – we should pay more attention, at least as much attention as we pay when we teach the natural sciences and logico-scientific thinking, to teaching narrative thinking, stories, and their theory. Or as he puts it himself in the important essay *The Narrative Construal of Reality*:

We devote an enormous amount of pedagogical effort to teaching the methods of science and rational thought: what is involved in verification, what constates contradiction, how to convert mere utterances into testable propositions, and on down the list. For these are the "methods" for creating a "reality according to science". Yet we live most of our lives in a world constructed according to the rules and devices of narrative. Surely education could provide richer opportunities than it does for creating the metacognitive sensitivity needed for coping with the world of narrative reality and its competing claims. It is so bizarre, given what we know about human thought, to propose that not history be taught without historiography, no literature without literary theory, no poetry without poetics. (Bruner 1999: 149)

Conclusion

We started this paper with a remark from the contemporary American novelist and essayist Paul Auster on the nature of the relationship between stories and children. Auster writes that stories are as necessary for children as food. Building on this intuitive grasp of the problem, we delved deeper into it with the help of the theories of education theorist (pedagogue) and cognitive psychologist Jerome Bruner, who wrote in depth about the universal narrative impulse in humans and its necessary place in education.

In the first part of the paper, we presented his distinction between the two modes of knowledge: the logico-scientific and the narrative modes – both universal to every culture and in every education. We elaborated further on this distinction but delved deeper into the narrative mode of knowledge. We referred to his analysis of the etymology of the verb to narrate, and concluded that narration is as much about knowing, as it is about telling – in other words, that narrative is a form of knowledge, equally respectable, but with different aims and characteristics than science. Then, we referred to Bruner's nine universal aspects of narratives, and talked about the function and the place of narratives in culture and society. We concluded the first part with the note that stories must be systematically taught in school because they play a necessary part in every person's life, in the working of society and the organism of culture. Also, because they are a form of knowledge with universal aspects that can be taught in a systematic and organized way.

In the second part of the paper, we concentrated on Bruner's writings concerning the place of the narrative in education. We noted that although Bruner thinks that narrative is universal to all cultures and societies and intrinsic to every human being and its genetics, it also can be prone to errors, distortions, sickness, malfunction, and manipulation. It must be nourished if we want to develop it in a right and healthy way. Following on these remarks, we talked about two ways in which narrative can be taught: 1. Quantitatively, by teaching as many narratives and as many forms of narratives as possible; 2. Qualitatively, by teaching about narrative itself, theoretically and critically, with the help of different methods such as *contrast*, *confrontation*, and *metacognition*. In the end, we talked about Bruner's remarks about the breakdowns in culture and society because of narrative malfunctions and distortions of consensual, political, material, and economic nature. We concluded this paper with a remark from Bruner's key essay, *The Narrative Construction of Reality*, according to which narrative and narrative thinking has to be taught with the same systematic, organized, and serious approach we take when teaching scientific thinking and science, because stories play a key role in our personal and public lives.

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CREATIVITY IN TEACHING MATHEMATICS

Abstract: Thinking about the future of education at all levels, we need to ask ourselves what qualities students need to be encouraged and how to prepare them for the challenges that tomorrow brings. Creativity has certainly been highlighted as one of the most important factors to be encouraged during the teaching process. Creative teaching methods motivate students to think, create freely and actively participate, and consequently create a pleasant teaching climate. This is also a feature of today's understanding of modern teaching and active learning. The results of some researchers point out that creativity in teaching is still not given as much importance as it should be, especially in the context of teaching mathematics, which is the basis of other scientific fields. Teaching media represent a significant contribution to raising the quality of teaching, and textual media, as the oldest among them, are still indispensable in classroom textbooks. In this context, the tasks that appear in them are especially important, and the focus of this paper are open-ended tasks that appear in textbooks in mathematics. Previous research on this issue has not gone in a direction conducive to creativity. The aim of this paper is to show the importance of creativity in teaching and the potential of open-ended tasks in response to the demand to encourage creativity in mathematics teaching.

Keywords: Creativity, Mathematics, Teaching, Open-ended tasks

Introduction

Creativity as a phenomenon in the last few decades has been placed in the focus of many scientific disciplines and is undoubtedly of great importance for future humane schools. There is no single and generally accepted definition of creativity, but many point to the use of divergent thinking, thinking "outside the box", finding new solutions, adaptability, self-actualization, originality, and flexibility (Aleinikov, Kackmeister, & Koenig, 2000; Dubovicki, 2016; Jaušovec, 1987; Prentice, 2000; Robinson, 2011; Torrance, 1981; Treffinger, 2002). George (2005, according to Koludrović, 2009) defines it as divergent thinking that leads to unconventional solutions while solving conventional tasks. Kwon, Park J. H. and Park J. S. (2006) state that it is a human ability or skill to solve problems and create new knowledge. Amabile (2013) identifies creativity as an appropriate response, product, or solution to an open-ended task and identifies three important components to the process: relevant skills, the ability to think creatively, and intriguing motivation. Bognar (2012) approaches it from a psychoanalytic, humanistic and social point of view and emphasizes its importance in realizing human potential, encouraging better teaching and the development of society itself through creative individuals.

Rački (2013) notes the lack of an adequate theory on the structure of creativity (as there are on the structure of intelligence or personality). It can be classified into domains: everyday, scientific and artistic, and people are usually not creative in all areas at the same time. He also mentions the problem of related terms (giftedness, creativity, talent, intelligence, genius...) that appear in the literature, sometimes inaccurately or as synonyms.

In the modern information world, creativity becomes much more important than accumulating knowledge and facts (Koludrović, Reić Ercegovic, 2010). "Creative" means that we need to remember. Today, computers search for information and calculate much more accurately than humans will ever be able to (Grégoire, 2016; Polonsky, 2013).