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## JEROME BRUNER

### AN EVOLUTION OF LEARNING THEORIES

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#### LEARNING OUTCOMES

Having read this chapter you should be able to:

- appreciate Bruner's background and his contribution to education
- understand and identify his educational philosophies and evolution of thought
- appreciate how his theories influence other thinkers within education
- critically appraise his works
- recognise how his ideas could be applied in practice.

#### KEY WORDS

culture; spiral curriculum; Man: A Course of Study; scaffolding; constructivism; cognitivism; computation

## INTRODUCTION

Jerome Bruner had a long, dynamic and esteemed career as a psychologist with a particular influence on education policy, learning and teaching and the development of the curriculum. His ideas have mostly been grounded in investigation and have affected both theory and practice. During the 1950s he concerned himself with the field of cognitive science, which he later came to argue against in favour of a constructivist approach (Bruner, 2009). To give an overview of how his ideas evolved we will briefly look at his major works.

In his early seminal text of 1960, *The Process of Education*, Bruner set out his ideas regarding cognitive development and how children represent concepts, which in turn led him to consider the importance of **culture** and the environment in their learning. He argued against the traditional view that children should learn facts and systems and was in favour of children constructing knowledge in a scientific manner. In so doing, if the child comprehended the fundamental process in a particular curriculum area, they could then progress to think in a holistic way about newly introduced topics. He argued for a '**spiral curriculum**' where themes were initially presented to learners and then revisited later on in the programme to reinforce understanding and give added vigour. His idea of the spiral curriculum also shaped his future thinking which gave prominence to the social and cultural aspects of the learning process (Scott, 2008). The child in Bruner's eyes was 'an active problem-solver, who had his or her own ways of making sense of the world' (Gardner, 2001: 92). Two years after the publication of *The Process of Education* Bruner planned and later managed the implementation of the **Man: A Course of Study (MACOS)** project. This was a radical venture to create a new, and refocused, school curriculum. The questions he and the planning team considered were what characteristics were involved in being a human: 'how people reach that state and how we might become more human' (Wragg, 2004: 16).

In later texts such as *Toward a Theory of Instruction* (1966) Bruner developed Vygotsky's ideas on social interaction for formal education, in particular the social interaction between the teacher and student in the form of **scaffolding** (Harkin et al., 2001). In *The Relevance of Education* (1971) Bruner offered his thoughts about how teachers help children construct modes of learning. He suggested there were three ways that children convert experiences into knowledge: through action, imagery and by symbols. The impact of Vygotsky is also apparent in Bruner's ideas at this stage, as he contested that learning includes the notion of internalisation and uses symbols and cultural interaction between humans. This interaction, Bruner argued, should be in the form of structured interventions facilitated by the teacher to promote thinking and problem solving where students discuss their thoughts with each other to find answers to the task at hand (Bartlett and Burton, 2020). Bruner's (1996) work *The Culture of Education* considered, and criticised, the broader function of schools and the school curriculum. He argued that education should not be confined by what goes on in

schools but should be a 'function of the culture-at-large ... [where there is] ... learning amidst the interactions and joint constructions of students attempting to construct knowledge' (Gardner, 2001: 94). He again stressed the significance of culture and the interface between learners and teachers in the process of building knowledge together. In summary, this work disputed the focus on the individual child and argued for the use of group work. The features of Bruner's theories, in the sequence they evolved, will be explored later in this chapter.

## JEROME BRUNER, THE PERSON

Jerome Bruner was born in New York City in 1915. He attended Duke and Harvard universities. He worked as a social psychologist during the Second World War in producing the broadcasting of public information, which involved researching the opinions of public thinking, matters of social attitudes and propaganda. Following the war, he emerged as one of the eminent thinkers about human cognition. He and his fellow social psychologists became involved in work relating to children's use of modes of representation at the Center for Cognitive Studies at Harvard University. Arguably, his greatest national role was to be chosen to chair the science commission which effectively set about reorganising the school system in the United States with a curricular emphasis on science and technology. This was largely in response to the perceived advances in technology by the Russians and in particular the launching of the first Sputnik satellite in 1957. In the 1960s he was influential in the Head Start project, which looked to provide a just foundation for disadvantaged young children before they began their formal schooling, and the project was replicated worldwide. Bruner transferred from Harvard to the University of Oxford in 1970, where he studied child agency and children's language. In the early 1980s he returned to the United States where he became drawn to the idea of cultural psychology and its application for education (Gardner, 2001; Wragg, 2004; Olson, 2007; Bruner, 2009). Bruner's thinking considered the broader, rather than the technical, aspects of education. He took into account the full scope of human abilities, which are interwoven in the process of learning and teaching, such as 'perception, thought, language, other symbol systems, creativity, intuition, personality and motivation' (Gardner, 2001: 91).

Bruner saw the purpose of school as encouraging individual students to share ideas with each other to create a culture of learning which encompasses society as a whole and prepares students for life once they have left the school environment (Harkin et al., 2001). During his early career he held the very positive, yet optimistic, idea that 'anyone can learn anything if it is pitched at the right level and presented in the right way' (Thomas, 2013: 76). Furthermore, Bruner was driven by a deep sense of social justice in his efforts towards educational change, especially relevant in the mid- and later twentieth-century United States – a point he underlined in the preface to *The Culture of Education*:

It was the 'discovery of poverty' and the civil rights movement in America that woke most of us from our unthinking complacency about reforming education – specifically, the discovery of the impact of poverty, racism, and alienation on the mental life and growth of the child victims of these blights. (1996: xiii)

Jerome Bruner died in 2016.

## BRUNER'S EVOLVING THEORY: COGNITIVISM, CONSTRUCTIVISM AND CULTURALISM

As a psychologist Bruner had an extraordinary and significant impact on educational policy, theory and practice. Although his body of work changed over a period of time, as a whole it can be seen as an alternative to the behaviourist approach with its emphasis on reward and punishment. Bruner's ideas, particularly as they evolved, stressed a more human approach to learning, where interests, motivation and culture were at the fore. Even though his theories changed, all still have varying degrees of significance today. This section will sequentially explore these shifts in Bruner's theoretical standpoints which are, generally, introduced and elucidated in his major works. It is a journey from his early experience in cognitive science and curriculum development to **constructivism** and infant development and, finally, to his notions of the importance of social and cultural factors in education and learning.

Bruner's earlier work focused on the development of the curriculum. Overall, his ideas on curriculum design and content were explored in *The Process of Education* (1960), where he argued that the curriculum should develop from a partnership between scientists and experts in specific subject areas, and with teachers. The subject experts would highlight central ideas which are particular to their field of knowledge, and also express their feelings about what it means to think and see things from a particular subject specialist viewpoint – for example from a physicist's perception. The other half of the partnership in the creation of the curriculum, the teachers, comprises the specialists in pedagogy whose task is to transform the advice of the subject specialists into a manner of interpretation which can be understood, and which can enthuse learners in that subject area (Pring, 2007). Bruner was heavily involved in two particular major projects launched in the 1960s which were the product of his research into the curriculum. Both, it is suggested, were influenced by his quest for social justice. The first, and internationally imitated, was the Head Start programme, which set out to give young children a positive beginning before they started school. The second was Man: A Course of Study (MACOS), which was a bold attempt at creating a complete curriculum derived from the then latest research into cognitive science. MACOS was also Bruner's attempt to design a curriculum without behavioural objectives; it was a social sciences curriculum heavily influenced by anthropology, and involved ten- to twelve-year-old pupils (Stenhouse, 1975). Overall MACOS set out to find out 'What is uniquely

human about human beings? How did they get that way? How could they be made more so?' (Gardner, 2001: 92).

What was significant in these two major projects, especially the latter, was Bruner's notion and application of the 'spiral curriculum' explored in *The Process of Education* (1960). While the spiral curriculum was a major product to come from this seminal work, the book also explored four main and important aspects, which were: the structure of learning and how it may be made central in teaching; readiness for learning (and the spiral curriculum); intuitive and analytical thinking; and motives for learning. The notion of a spiral curriculum has been the mainstay of numerous policy edicts on curricula design. According to Bruner, what was important was not:

... *coverage but depth* ... It was a short step from there to the idea that the shape of the curriculum be conceived as a spiral, beginning with an intuitive depiction of a domain of knowledge, circling back to represent the domain more powerfully or formally as needed. The teacher, in this version of pedagogy, is a guide to understanding, someone who helps you discover on your own. (1996: xii)

The idea of a spiral curriculum considers that knowledge is refreshable and needs revisiting to further develop. This in turn has implications for the previous notions from thinkers such as Piaget that learning is a process where children pass through a series of predetermined stages. The spiral curriculum considers that the child builds upon knowledge by revisiting topics and, hence, gives greater depth to their learning and 'makes sense of that body of knowledge in terms of their current concerns, preoccupations and states of mind' (Scott, 2008: 91). Johnston (2012) sums up the following three main facets of Bruner's notion of the spiral curriculum:

- The student revisits a topic, theme or subject several times throughout their school career.
- The complexity of the topic or theme increases with each revisit.
- New learning has a relationship with old learning and is put in context with old information.

Unlike Piaget's sequential and predetermined stages of learning, such as the sensorimotor, preoperational, concrete and formal operational stages, Bruner considered three modes whereby children develop their experiences into learning. These are the enactive, iconic and symbolic modes. The *enactive mode* relates to where children do things for themselves through action and play. The *iconic mode* happens when children can comprehend images, pictures and numbers. The *symbolic mode* is where children can understand abstraction, language and reason. Bruner stressed that the acquisition of these modes was not a sequential process but was reliant on being developed with other people. Furthermore, he argued that there might be one mode which would be overriding at any specific phase of a child's development (Wragg, 2004; Scott, 2008).

Bruner (1996) appears to admit in his later works that his earlier theories regarding **cognitivism** were too focused on the individual child and processes of learning. His idea of **computation**, for example, considered:

... learning as comprising coded unambiguous information about the world being sorted, stored, retrieved and managed in the same way that a computer processes data. The mind is a blank sheet ... the individual is treated as a passive reflector of the way the world works; correct or incorrect views of the world are understood as a function of the efficiency with which these processes are conducted. (Scott, 2008: 92)

The significance of this notion of computation is that information is processed once gathered and is unchanging and of no personal worth to the gatherer. It could be construed that such computation considers the mind as some sort of computer which needs to be programmed in a particular way for it to operate in a competent and economical manner. As such, computation promotes categorisation and formulae which render students into the membership of a prescribed class rather than celebrating their individuality (Thomas, 2007). Therefore, this for Bruner was a troubled notion because computation in this sense does not take into account the varieties, uncertainties and ambiguities which are present in contextualised learning, which as an activity is constructed socially (Bruner, 2009).

Bruner's ideas evolved from the perceived singularity of computation and information processing, which favoured a didactic approach to learning, towards stressing the importance of children actively constructing their knowledge. This knowledge and meaning-making, he argued, was constructed from children's current and previous experiences as well as with others. Children build their knowledge not only with others but also by interacting with their environment. For Bruner, this constructivist phase was rooted in problem solving and discovery learning. Discovery learning, for Bruner, assisted learners to make their own meaning by engaging 'in discussions and the use of concrete materials, which causes learners to gain insights into the processes of knowledge' (O'Donnell, 2007: 134). An approach which adopts discovery learning is scaffolding, which is akin to the ideas put forward by Vygotsky. Bruner based his pedagogical application of scaffolding on an engineering model, where a teacher creates a scaffold 'to support the efforts of the learner to construct his or her own understandings' (Olson, 2007: 45). Scaffolding is further explored in the following sections, and in the Vygotsky chapter (Chapter 4). Rather than the pedagogy being didactic, it was in favour of practical and activity-specific teaching. *Toward a Theory of Instruction* (Bruner, 1966) was considered as having significant influence on the application of social constructivism in curriculum design and practice in the classroom (Wragg, 2004). Moreover, in *The Relevance of Education* (1971) Bruner argued that such constructed learning should be of social significance in addressing some of the difficulties in the world and also 'self-rewarding', 'real', 'exciting' or 'meaningful' (1971: 114). His views of constructivism are seen as a link between the individualistic notion of cognitivism and computation to his more recent theory, which stressed the importance of culture in learning.

Bruner's emerging ideas of the value of culture and the environment began with his emphasis on the importance of the home environment and the function of the mother in regard to the linguistic progress of the child. These ideas then moved on to trying to understand, from a cultural point of view, the differences between learning that took place in school and outside school. His seminal *The Culture of Education* (1996) marks his focus on how culture shaped the way that children learned. It is argued that this swing of emphasis, from a cognitive and constructivist approach, was brought about because of his increasing disquiet with issues of social injustice. *The Culture of Education* included much of his previous work with linguistic and literacy development. It was intended to help educators recognise:

... that when children do badly at school the reasons might lie not in some kind of 'independent' development that can be characterised and analysed outside of any socio-cultural context, but rather in the social *conditions* in which the child lives and grows up. (Moore, 2000: 24)

Bruner's earlier work with language centred on how children gained their skills in literacy. This he considered was developed when children were occupied in using written symbols and abstract ideas to make sense of the world. However, in his later works he argued for the use of narratives in education. Narratives, for Bruner, were both written and spoken and could be in the form of family discussions and observations of life and how children interact with each other. Involvement in narratives assisted children in expressing their worries and aspirations; narratives also helped them question accepted knowledge, reason and make sense of the world and create theories of their own in the relative safety of their own culture (Wood, 1998; Hutchings, 2013): 'Narratives, for Bruner, provide a source of newness, innovation and critical reflection on existing ways of understanding' (Scott, 2008: 101). These refreshing and innovative ways of understanding were shared by many other educational thinkers.

## LINKS WITH OTHER THEORISTS

It would be a mammoth task to give a comprehensive account of Bruner's links with other educational thinkers. Certainly, Bruner's social constructivist ideas are very much similar to early educational thinkers including Plato, Locke, Rousseau and Froebel – 'ideas in the progressive tradition which stressed the importance of adults gently nurturing the cognitive growth of children' (Thomas, 2013: 75). He became increasingly inspired by the works of Vygotsky, which emphasised that most learning is developed by the use of cultural tools and formed over time by others. However, even though Vygotsky stressed the significance of the social and cultural aspects of learning, unlike Bruner's ideas, '[his work] is largely devoid of any overt political or "ideological" dimension' (Moore, 2000: 22).

Bruner's three modes of learning – enactive, iconic and symbolic – have been construed and expanded into the visual, auditory and kinaesthetic (VAK) learning styles, phenomena used when planning differentiated teaching and learning activities. Perhaps more importantly these modes have also enlightened Gardner's multiple intelligence theories, and these have been developed to design curricula to engage these different and individual 'intelligences'.

Bruner's ideas about the 'child-centred' approach to teaching underline the value of constructing a relationship between teacher and pupil. This approach calls for a pedagogical mode very much aligned with Dewey's thoughts on transferability and non-subject-specific teaching, and 'more concerned with interpretation and understanding than with the achievement of factual knowledge or skill performance' (Bruner, 1996: 57). This is also evident in the works of Gardner, who in his book *The Unschooled Mind* (1991) argued against the testing of knowledge and towards a notion of how children 'think about their thinking' and how they perceive the world around them. It was important, then, to utilise the cultural assets of the child's family and community together with the values and beliefs held by that culture in the teaching and learning designed and employed. Similar to Bruner, Loris Malaguzzi and the Reggio Emilia approach to educating young children also considered that children should focus on developing a shared language which is derived from experiences gained from the community as well as school (Farnan, 2012). Bruner often worked with the pre-schools of Reggio Emilia and other Italian community early years schools in the 1990s, and he became an honorary citizen of Reggio Emilia in 1998 (Hall et al., 2010). There are also comparable connections between Lawrence Stenhouse's Humanities Curriculum Project and Bruner's MACOS, in that they both are aimed at constructing curricula relating to the social sciences and diverse cultures (Aubrey and Riley, 2019).

It is interesting to note that more contemporary educational, and social, thinkers have also adopted and developed Bruner's ideas, especially his later thoughts on the implications that cultures have had on learning and the role that schools and language play in that process. This is similar to the adult educator Malcolm Knowles, who considered that learning should be based on students' past experiences. People like the Latin American and radical educational philosopher Paulo Freire, whose ideas of teaching literacy to non-reading adults was similar to the guidance of Bruner and his spiral curriculum, 'start where the learner *is* and make it meaningful' (Thomas, 2013: 116). Freire also contested that schools disadvantage, and indeed fail, those who do not conform to what society expects. Such conformability which schools require (schools turning out what they perceive is needed in society and the marketplace) is also contested by the French social thinker Pierre Bourdieu. Such conformability may well be at odds with the cultural norms, or what he calls 'habitus' – 'the stuff of daily life that gives shape to our biases and predispositions' (Bruner, 1996: 79). The criticisms of educational establishments that were espoused by Bruner were also echoed by Basil Bernstein, who argued that the school assessment and curriculum favoured



those learners whose home cultures 'match those cultures validated within the education system ... [who] will enter that system already in possession of what Bernstein and others call "cultural capital" (Moore, 2000: 98). Both Bourdieu and Bernstein argue that there would need to be a dramatic change in the school curriculum and assessment criteria to encompass those who do not fall within the category of the main social group.

Scaffolding is promoted by Barak Rosenshine in his notion of principles of instruction, and is also an integral part of Guy Claxton's idea of Building Learning Power. Carol Dweck's quest to encourage children to adopt approaches which challenged their learning processes so they could realise their full potential is also in line with the concept of scaffolding. Furthermore, scaffolding is closely associated with the concept of apprenticeships as explored by Lave and Wenger (1991) in their *Situated Learning: Legitimate peripheral participation*. Olson clearly makes the connection between scaffolding and apprenticeships:

A novice would be given small tasks at the margins of a complex task and, as mastery increased, be given greater and greater responsibility for more and more complex tasks. (2007: 46)

Furthermore, Wenger, in his seminal *Communities of Practice: Learning, meaning, and identity* (1998), like Bruner, presents his own theory in which he argues that learning is a social and cultural activity and involves matters of community, social practice, meaning and identity. Although many others have followed and developed his ideas, Bruner's theories throughout are not uncontentious.

## CRITIQUING BRUNER

When we seek to critique Bruner's works it must be done with an understanding that his ideas changed and evolved over a long period of time and that he himself recognised with some misgiving the frail aspects of his earlier ideas and claims. Therefore, it is quite fitting that this section starts with Bruner's own criticism of his declaration that any subject can be taught to any child at any point of their development in some form that was honest. This was an exciting possibility, yet one that could never be proved or disproved as he never really explained what he meant by 'honest'. In his own words, "honest" was left undefined and has haunted me ever since! (Bruner, 1996: xii). Even though much of his work has been adopted in education policy and curriculum design, it is somewhat doubtful as to whether or not some of his ideas on socially, culturally and creatively acquired learning are truly practicable for teachers in busy classrooms and within an increasingly performative environment which seeks continuous grade improvement. For example, how realistic is it for teachers to modify and make changes to the cultural contexts of their own settings?

Bruner's ideas on discovery learning have also been criticised, insofar as children may misconstrue meaning, which may in turn be unobserved by teachers. In addition, discovery learning would not suit those children who would prefer a more didactic style of learning and there is a growing perception that children should be involved in a more traditional form of teaching and learning, particularly when schools are increasingly driven by reaching targets and doing well in examinations (MacBlain, 2014). In particular, David Ausubel was highly critical of Bruner's concept of discovery learning. As a foil to discovery learning Ausubel argued for the use of reception learning, because young children needed to learn by direct instruction from the teacher first and there was too much to learn at school with too little time for discovery. With Ausubel's reception learning 'children were presented with the content to be learned and did not need to discover on their own' (O'Donnell, 2007: 133). Ausubel also censured the belief that discovery resulted in a deeper level of learning and that it was not a credible alternative to the direct teaching involved in reception learning (Bartlett et al., 2001; Olson, 2007).

Although the notions of scaffolding and spiralling are exciting and have practical application regarding enhancing deep learning, they are still dependent on having knowledgeable and confident teachers. For such notions to be productive, both scaffolding and spiralling require teachers who know when to help, when to let go, how to motivate and, possibly more importantly, know the individual needs of the children. With this in mind, it is also important to recognise that Bruner's own research regarding scaffolding only involved working with children on a one-to-one basis. In this situation it was much easier for him to be appreciative of the needs and comprehension of an individual student, unlike a teacher who has to cope with a whole class and check levels of understanding and make teaching adjustments for each child (Olson, 2007). Furthermore, Johnston (2012) argues that although the conceptual principles of the spiral curriculum seem rational and secure, there is little empirical research to support its overall effectiveness.

Furthermore, the idea of culturalism, by Bruner's own admission, 'is in principle interpretive, fraught with ambiguity, sensitive to occasion, and often after the fact' (2009: 163). It could also be argued that the notion of culture itself is shifting with the impact of globalisation, making geographically regional cultures less influential in learning and the design of curricula. In tandem with globalisation, ever-increasing advances in technology have also had a bearing on the degree of impact that culture has on learning.

## APPLYING BRUNER IN THE CLASSROOM

Before we set out to explore how Bruner's ideas could be applied in the classroom, it is pertinent at this point to remind ourselves of his influence on how we think about learning and the function of schools and indeed education. Bruner disputed the traditional reason for both schools and education. For him the role of schools 'is part of the process through which culture inducts children' (MacBlain, 2014: 118). It is with

this radical understanding that the purpose of education and schooling should be embedded in the cultural context of the child, that we should consider how Bruner's theories could be put into practice. Moreover, Bruner stresses that for the most part teachers cannot be expected to be experts in every facet of every subject. It therefore follows that teachers should place themselves in the position of learners along with their students. As we shall see, this suggests that teaching methods should take the form of discovery and enquiry rather than instruction – where both teachers and students share a learning adventure together (Stenhouse, 1975).

One of his deep-seated notions was that teachers should reflect on how they engage with their learners. Here, he argued, is where theories of learning should be intersubjective instead of objectivist in their nature. He notes that objectivist theory acts as a division between the teacher as the theorist and the learner as the subject. This suggests that the teacher, or the theorist, makes a 'culture-free judgement about the subject [learner], including their learning needs' (Moore, 2000: 25). Equally, he states that the intersubjective theorist should apply the same theories to themselves as to the learner. This intersubjectivity is 'reflexive, seeking to use self-understanding as a way of understanding the minds of others, and vice versa' (2000: 25). It implies that teachers should be aware of their own practice and opinions when a learner seems to waver, instead of seeking reasons wholly from the learner.

In line with this notion of intersubjectivity, Bruner's earlier work with pedagogy highlighted the need for the teacher to act as a motivator and a catalyst for learning. He certainly argued against a didactic and routine pedagogical manner of teaching which might stifle any inherent motivation in the learner. He called for teachers to allow learners to explore and discover in the learning process. As such, teaching needs to be more than the presentation of facts and explanations, it needs an injection 'of excitement about discovery – discovery of regularities of previously unrecognised relations and similarities between ideas' (Bruner, 1960: 20). In doing so Bruner considered 'all knowledge as provisional, all learning as an adventure against boundaries' (Stenhouse, 1975: 16). Discovery learning could be seen as a way that the internalisation of 'meaning can be strengthened along with the conceptualisation of new information into already existing knowledge' (MacBlain, 2014: 56).

Scaffolding, a pedagogical practice linked with Bruner's idea of discovery learning, involves the learner being helped by an adult or another child (who possesses a greater level of knowledge) by starting tasks, simplifying problems and highlighting errors to a point where the child can do tasks by themselves. Successful scaffolding is evident when there is a shift of responsibility from the teacher (or other) to the child. The task of the teacher in scaffolding, then, is to encourage the child to think for themselves by involving critical thinking, and problem-solving activities. Specifically,

... [the] teacher might give general verbal encouragement to the whole class, follow this up with specific verbal instruction to groups who need it and perhaps target individuals with guidance on strategies for approaching the task. Some pupils will need physical help in performing the task and yet others need to be shown exactly what to do, probably in small stages. (Bartlett and Burton, 2020: 272)

## UNDERSTANDING AND USING EDUCATIONAL THEORIES

Vygotsky felt that learning was a social activity where children's learning developed through interaction with other children, teachers and parents. Bruner extended the idea of scaffolding even more, because he considered that scaffolding was flexible and evident in all aspects of a child's learning:

Grandparents or teachers may actively break down tasks into smaller more manageable parts and model to the child how the tasks or problems can be solved, or teachers may put children together in groups to solve a problem and find that the weaker children are learning from the more able through, for example, observation, imitating and using language. (MacBlain, 2014: 56)

Bruner argued that children should be encouraged to use written symbols to develop language in order to explore and question new phenomena and to enable them to make links with knowledge previously gained. Later in his research, he urged teachers to encourage children to use narratives based on their cultural environment to interact with others, both teachers and other learners, to help solve the problems they encounter in the classroom.

The use of language in discovery learning is evident in one of Bruner's most influential notions, which considered the shape of the curriculum – a shape which he thought should be spiral in form, starting with an initial description of the subject, then returning to the same area with greater depth. The role of the teacher within the spiral curriculum, similar to scaffolding, is to assist the child to develop a deeper understanding and help them discover on their own (Bruner, 1996). The spiral model is not just applicable to the 'curriculum', but is also an influential tool that can be used in single and groups of sessions to give depth to the learning process and fits well with enhancing discovery learning. The application of the concept of 'spiralling' moves away from the notion of a steady build-up of knowledge as the teacher allows and encourages the child to reflect on understandings and revisit these understandings if needed. Children use new knowledge, understanding and experiences to look again at what they have already learned.

For such spiralling to be effective, especially in the teaching of specific subjects, Bruner encouraged teachers to create organisational structures which enable children to understand the subject in relation to the broader context of learning. Not making these links to the broader picture, he felt, was both detrimental to and uneconomical in the learning process. However, building these links into teaching helps children generalise and comprehend general principles, which in turn make learning a subject exciting and rewarding. He further argued that by having structures in place which help children make links to other learning, as well as structures which enable them to see the bigger picture, skills which enhance memory are developed (Bruner, 1960). This concept of seeing how the individual elements of a subject fit into the wider aspects of learning is aligned with a deeper and more lasting approach to learning. The advantages for the learners are that their thoughts are 'on the meaning of a topic as a whole, coming to see its critical features and

recognise the interrelationships between them' (Entwistle, 2009: 77). Johnston (2012) lists the benefits of spiralling and the spiral curriculum:

- The information is reinforced and solidified each time the student revisits the subject matter.
- The spiral curriculum also allows a logical progression from simplistic ideas to complicated ideas.
- Students are encouraged to apply the early knowledge to later course objectives.

Bruner's ideas on teaching and learning may appear somewhat radical, particularly in a climate of overly prescriptive education policy. Wragg, however, urges teachers to:

Use his ideas as a spur to shake off dependency and apprehension, to have the confidence to exercise more of your own professional judgement about where children are, how they can think and act better, what they need to construct their own meanings and understandings, with not a tick box in sight. (2004: 16)

#### OVERVIEW OF APPLICATION: BRUNER'S IDEAS FOR CLASSROOM PRACTICE

Bruner's notions of a spiral curriculum, discovery learning and scaffolding have been explored, but the following general suggestions are offered for overarching ideas for following his principles of social constructivism:

- Understand the cultural differences and experiences for all students.
- Encourage, where possible, the use of learning and teaching methods which promote discovery, enquiry and language development.
- Use encouragement and prompts for problem solving, taking into account your knowledge of the individual students.
- Promote the use of linking new knowledge with that already learned.
- Advance the use of group work for problem solving.
- Finally, support students to build and pursue their own understanding of new knowledge through discussion with others.

## SUMMARY

Bruner's long and distinguished career as a psychologist has had a significant impact on many areas of education. All his ideas have emanated from his drive for social justice, stimulated by what he considered was the 'blight' of poverty, racism and the inequities of social life. He held a considerable number of positions of importance,

which included the reorganisation of the school curriculum in the United States and implementing the Head Start programme.

Bruner's thinking evolved over the years from cognitivism to constructivism and then to culturalism. These thoughts and theories are evident in his major works. The first was *The Process of Education* (1960), which argued for curriculum reform, especially for the early years, and set out his thinking for the spiral curriculum, which gave educators an innovative notion of pedagogy and the learning process. Following this he set up and led the MACOS project. The next influential texts which highlighted the shift of his thinking were *Toward a Theory of Instruction* (1966) and *The Relevance of Education* (1971). These considered how teachers can help children construct modes of learning and how children convert experiences into knowledge through action, imagery and by symbols. Probably his most influential work was *The Culture of Education* (1996), which explored the function of schools and the value of culture in the learning process.

It is clear that Bruner was influenced by the works of Vygotsky, especially in his notions of scaffolding, the spiral curriculum, interactive and exploratory learning and the dismissal of subject-specific teaching. It is telling that a considerable number of renowned thinkers on education could also be linked with the ideas of Bruner, particularly the value he placed on language and culture, including Freire, Bourdieu, Bernstein, and Lave and Wenger. His ideas on curriculum design were also aligned with those of Lawrence Stenhouse; indeed, the MACOS project has similarities of purpose and design with Stenhouse's Humanities Curriculum Project. His thoughts on early years education were comparable with Loris Malaguzzi and the Reggio Emilia experience in Italy. Scaffolding is also linked with the work of Barak Rosenshine, Guy Claxton and Carol Dweck. Most of the criticisms of his work focus on his earlier and more idealistic notions, but these were accepted by Bruner himself. Otherwise, the criticisms relate to teachers being unable to be as creative as he would have wished because of the constraints and overprescribed nature of government-imposed curricula. There remain misgivings about the notions of the spiral curriculum and scaffolding because to be effective both these notions require teachers to be both knowledgeable and confident in their practice. Nevertheless, there are still many aspects of his concepts that are applicable in classrooms today where teachers can 'Make the principle of social justice a reality. Assert what is human about humanity. What are you waiting for?' (Wragg, 2004: 16).

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## GLOSSARY OF TERMS

### Cognitivism

A theoretical position which stresses that thinking and understanding are fundamental to the learning process. Learning and teaching should be focused on the needs of the individual student, and also be structured according to those needs.

### **Computation**

Is concerned with information processing once it is gathered. It considers the brain as having a similar function to a computer which needs to be programmed in order to make sense of the world. This is a contested concept because it fails to recognise the complexities and diversities inherent in learning as a socially constructed activity.

### **Constructivism**

Stresses the significance of students constructing their knowledge and understanding by being interactively involved in the learning process, building upon what they already know. Constructivism, for Bruner, is the link between the individual concept of cognitivism and his emphasis on culture in the learning process.

### **Culture**

The notion that the social background and environment have a significant effect on students having a meaningful learning experience. It is through culture that children, from an early age, make sense of the world around them. The roles of the family, home environment and community have a particular influence in relation to the linguistic development of children.

### **Man: A Course of Study**

A far-reaching project which developed from the latest cognitive science research to construct a new radical and transformed school curriculum. The project's aim was to discover what was distinctive about a human being, and how to become more human, then design a new school curriculum which took into account the findings.

### **Scaffolding**

This is the help given by an adult, or capable other, which enables the child to solve problems or achieve given tasks that would have otherwise been beyond their level of competence, the intention being that when a child achieves success through scaffolding they are then sufficiently confident in attempting similar tasks on their own. Successful scaffolding requires the adult, or capable other, to be aware of the individual child's abilities and to be responsive to their needs (Aubrey and Riley, 2019: 67).

### **Spiral curriculum**

A concept whereby students are introduced to topics and then revisit these later to reinforce their understanding. Each time the topic is revisited, students improve their depth of understanding and their confidence in applying that knowledge.

## FURTHER READING

- Bruner, J. (1986) *Actual Minds, Possible Worlds* (The Jerusalem-Harvard Lectures). Cambridge, MA: Harvard University Press.  
An exploration of the links between language and reality.
- Bruner, J. (2006) *In Search of Pedagogy Vol. 1: The selected works of Jerome S. Bruner*. Abingdon: Routledge.  
Bruner's critical analytical examination of his own works from 1957 to 1978.
- Bruner, J. (2006) *In Search of Pedagogy Vol. 2: The selected works of Jerome S. Bruner*. Abingdon: Routledge.  
Bruner chooses and presents his most influential writings about education from 1979 to 2006.
- Carr, D. (2003) *Making Sense of Education*. London: RoutledgeFalmer.  
Chapter 6, 'Learning: Behaviour, perception and cognition', gives an overview and criticism of Bruner's notions of cognitivism.
- Illeris, K. (ed.) (2009) *Contemporary Theories of Learning: Learning theorists ... in their own words*. Abingdon: Routledge.  
A critical review of some of the contemporaries of Bruner and their thinking, including a chapter by Bruner himself.
- McLay, M., Mycroft, L., Noel, P., Orr, K., Thompson, R., Tummons, J. and Weatherby, J. (2010) Learning and learners. In: Avis, J., Fisher, R. and Thompson, R. (eds) *Teaching in Lifelong Learning: A guide to theory and practice*. Maidenhead: Open University Press.  
A concise yet informative review of Bruner's cognitivism and the application of the spiral curriculum shown in a scheme of work, taken from a lifelong learning perspective.

## REFERENCES

- Aubrey, K. and Riley, A. (2019) *Understanding and Using Challenging Educational Theories*. (Second Edition). London: Sage.
- Bartlett, S. and Burton, D. (2020) *Introduction to Education Studies* (Fifth Edition). London: Sage.
- Bartlett, S., Burton, D. and Peim, N. (2001) *Introduction to Education Studies*. London: Paul Chapman.
- Bruner, J. (1960) *The Process of Education*. Cambridge, MA: Harvard University Press.
- Bruner, J. (1966) *Toward a Theory of Instruction*. Cambridge, MA: Harvard University Press.
- Bruner, J. (1971) *The Relevance of Education*. New York: Norton.
- Bruner, J. (1996) *The Culture of Education*. Cambridge, MA: Harvard University Press.
- Bruner, J. (2009) Culture, mind and education. In: Illeris, K. (ed.) *Contemporary Theories of Learning*. Abingdon: Routledge.
- Entwistle, N. (2009) *Teaching for Understanding at University*. Basingstoke: Palgrave Macmillan.
- Farnan, R. (2012) Educational psychology. In: Arthur, J. and Peterson, A. (eds) *The Routledge Companion to Education*. London: Routledge.



- Gardner, H. (1991) *The Unschooled Mind: How children think and how schools should teach*. New York: Basic Books.
- Gardner, H. (2001) Jerome S. Bruner, 1915–. In: Palmer, J. (ed.) *Fifty Modern Thinkers on Education*. Abingdon: Routledge.
- Hall, K., Horgan, M., Ridgway, A., Murphy, R., Cunneen, M. and Cunningham, D. (2010) *Loris Malaguzzi and the Reggio Emilia Experience*. London: Bloomsbury.
- Harkin, J., Turner, G. and Dawn, T. (2001) *Teaching Young Adults: A handbook for teachers in post-compulsory education*. London: RoutledgeFalmer.
- Hutchings, M. (2013) Arriving in a new place: The ecology of learning. In: Ward, S. (ed.) *A Student's Guide to Education Studies* (Third Edition). Abingdon: Routledge.
- Johnston, H. (2012) *The spiral curriculum*. Education Partnerships, Inc./University of South Florida. Available from: [www.files.gov.ed/fulltext/ED538282.pdf](http://www.files.gov.ed/fulltext/ED538282.pdf) [accessed 26 February 2021].
- Lave, J. and Wenger, E. (1991) *Situated Learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- MacBlain, S. (2014) *How Children Learn*. London: Sage.
- Moore, A. (2000) *Teaching and Learning: Pedagogy, curriculum and culture*. London: RoutledgeFalmer.
- O'Donnell, M. (2007) *Maria Montessori*. London: Bloomsbury.
- Olson, D. (2007) *Jerome Bruner*. London: Bloomsbury.
- Pring, R. (2007) *John Dewey*. London: Bloomsbury.
- Scott, D. (2008) *Critical Essays on Major Curriculum Theorists*. Abingdon: Routledge.
- Stenhouse, L. (1975) *An Introduction to Curriculum Research and Development*. London: Routledge.
- Thomas, G. (2007) *Education and Theory: Strangers in paradigms*. Maidenhead: Open University Press.
- Thomas, G. (2013) *Education: A very short introduction*. Oxford: Oxford University Press.
- Wenger, E. (1998) *Communities of Practice: Learning, meaning, and identity*. Cambridge: Cambridge University Press.
- Wood, D. (1998) *How Children Think and Learn* (Second Edition). Oxford: Blackwell.
- Wragg, T. (2004) An icon of the mind. *Times Educational Supplement*, 6 August.