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Risk literacy in early childhood education under a lifelong perspective

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Abstract

Risk entails every action, every level and every perspective of our lives. The ability to make advantageous decisions, to deal with uncertainties, to infer and estimate more or less probable outcomes, to manage risky or riskless situations compose the wider notion of risk literacy and may be inserted from formal preschool education. The current paper aims to enlighten the notion of risk literacy and safety education as a necessity in establishing pupils ready to accept failure, to achieve success, to take initiatives, to become self-competent, to develop probabilistic and statistical thinking, to confront uncertainty and in turn to face the challenges of modern risk society. It is argued that within the formal settings of preschool education, through developmentally appropriate activities, opportunities may be implemented in order to encourage children as future citizens to construct risk literate personalities. It is concluded that risk perception and management imply awareness, assessment, avoidance and adaptation and are connected with growth, maturity, practice, experiences, intuitions and computations.

1. Defining risk

Risk has many definitions depending on the context, the field of application and the adopted perspective undertaken. There is no one definition thus, according to Harding (1998) risk refers to “a combination of probability or frequency of occurrence, of a defined hazard and the magnitude of the consequences of the occurrence” (p.167). On one hand, risk is usually mapped as the probability of some event which is seen as undesirable; in these cases risk is mostly connected with a negative meaning (Webb, 2006). On the other hand, Bernstein (1996) attributes a more positive meaning to risk by mentioning that there should be a transformation of “the perception of risk from chance of loss into opportunity for gain, from fate and original design to sophisticated, probability-based forecasts of the future, and from helplessness to choice” (p. 337).

Many times risk has a personalized, subjective significance. Under this perspective, people respond to situations under uncertainty and individual influences through heuristics and biases; mental short-cuts and intuitive reactions in processing information and taking decisions. Usually, individuals react spontaneously and rapidly in such situations; through representativeness or adjustment and anchoring, or availability or simulation according to Tversky and Kahneman (1974), through affect and feelings, according to Slovic et al (2002) or perceived behavioral
control, according to Ajzen (1991), or through multiple combinations amongst them. However, heuristics “sometimes yield reasonable judgments or (lead) to severe and systematic errors” (Kahneman & Tversky, 1973, p. 237).

Other times, risk may be considered as socially constructed. Contemporary advances in terms of technology and innovations, including the threats of nature or the threats of tradition, have generated a diversity of possible futures (Giddens, 1999). In this sense, according to Beck (2006), modern risk society has to systematically deal with hazards and insecurities induced and introduced by modernization itself. As Giddens (1999) explains modern risk society “is increasingly occupied with debating, preventing and managing risks that it itself has produced” (p.3).

In all cases, risk is part of our everydayness and the ability to manage, assess, compute and analyze risky and riskless situations relates to decision making mechanisms and literacy competence. Risk involves situations in which people, as potential risk-takers, are required to make choices where the outcome, either positive or negative, either personal or collective, either straightforward or more complex is unknown. Such situations require skills and knowledge for the evaluation of all possible outcomes, the estimation of the likelihood of success or failure (Little and Eager, 2008) and may be introduced from early childhood education.

2. Risk and risk-taking in early years

Children enjoy challenges and driven by their curiosity they get involved in risky situations very often. The reasons are multiple: ignorance, emotional or social influences such as enthusiasm or peer group engagement, lack of abstract thought and reasoning, immaturity, sensation-seeking, motivation, tendency to experiment and so on. Through their mistakes, children learn to cope with uncertainty and novelty, they test their strengths, recognize their limitations, and become creative, decisive and ambitious. If not, they wouldn’t learn to crawl, to communicate, to ride a bicycle, to handle scissors and conquer the world. From a very early age, children act between the expected rewards of their choices and the adverse perceived costs of failure (Adams, 2006). Under these lines, growth involves taking risks and moving from ‘safe’ contexts to more unfamiliar ones by constructing new experiences and understandings (Dweck, 2000).

Risk-taking is interconnected with aspects of cognitive, social, emotional and biological development (Boyer, 2006) while age, gender, socialization practices, personality traits, policy provisions are some of the components that embrace risk-taking in early years (Little, 2006). Especially while young children engage with new activities and daring experiences they have the opportunity to advance and gain mastery over themselves and their surroundings. They test their possibilities, apply trial and error processes, take initiatives, get actively engaged with unknown situations, while forming a fully functioning, responsible and competent personality (Tovey, 2007). Concisely, children require exposure to risk as a normal component of childhood development (Little and Eager, 2008).

In informal contexts, before the school settings, preschoolers get often involved in risky conditions through their active decision making and the responsive desirable or undesirable consequences. Play is one of the major means that allow children to test the limits of their physical, motor, social, emotional and cognitive development, get mastery over their bodies, develop motor skills, come up with strategies and learn how to engage in and assess new challenges (Little and Eager, 2008). Through risk-taking playful situations, children become confident and competent, they learn to face uncertainty, make inferences, process information, follow rules, accept failure, whether we take into account organized board games and guessing games where the aim is to win, whether we refer to physical activities and free play where a potential accident is likely to occur.

Research on children’s risk-taking mainly involves comparative experimental studies and adaptations of tasks for adults and adolescents that examine age differences, sex differences and trends in risk-taking. The emphasis is on how young children use their analytical and/or intuitive thinking in conditions of gain and loss. It has been found through diverse methodological and theoretical approaches that preschoolers possess capacities and subjective strategies on whether to risk or not, in order to attain a gain or avoid a loss in controlled contexts (i.e. Levin et al, 2007; Figner et al, 2009; Garon and Moore, 2007; Nikiforidou & Pange, 2011). Under these lines, risk-taking
emerges before formal education and appropriate teaching and learning practices in turn, may lead successfully to risk literate students.

3. Risk literacy from early childhood

Risk literacy implies the ability to deal with uncertainties in an informed way as defined by Gigerenzer (2008). As a competence it implies being familiar with statistical and probabilistic notions while making choices about health, money and other aspects of life (Spiegelhalter, 2009). It is consisted of life-long skills that develop and emerge through the lifespan and entail perceptions and responses to risks. Risk literacy includes communicating, understanding, appreciating risk and developing respective skills, knowledge and attitudes. Risk literacy in education aims at young people and their teachers who face an increasingly complex world where old certainties get altered or replaced by others. Risk literacy is as important in our century as reading and writing were - in terms of literacy- in the 20th century, according to Gigerenzer (2008).

The development of risk-taking in early ages is formed mainly by cognitive capacities (such as probabilistic estimations, reasoning, decision making, causal inferences), affective tendencies, biological/neurological bases and socio-cultural influences in terms of parental strategies, peer interactions and sociometric factors (Boyer, 2006). By taking into account such parameters as well as children’s prior knowledge, the preschool classroom can support young children’s literacy towards risk, hazard, safety, information processing, decision making (Fig. 1); not only in terms of risk-aversion but also in terms of risk-seeking whenever required.

The exposure to risk may be inserted within the school settings under Risk or Safety Education through diverse ‘controlled’ environments and programs. In the course of developmentally appropriate activities young children may be introduced, either individually or in groups, either outdoors or within their classroom, either in maths, in environmental education, in health education or in other modules, either occasionally or systematically, in contexts that require estimation, computation, causal reasoning, gain and loss perception as well as statistical knowledge. Secure settings and protective frames consist an important factor in encouraging children to be willing and able to engage in risky situations as underlined by Little (2006) and Stephenson (2003).

As Greenfield (2003, p. 5) states risk is: “part of children’s play and necessary to their development and learning”. Programs that include both theoretical and practical dimensions of approaching risk and promoting safety can be implemented at a basic level from preschool education. Active learning, real life data and examples, interactive and purposeful safety/risk materials/resources, work in partnership with experts, understanding of the
meanings of protection and risk factors, discussions and group work contribute in the effectiveness of safety and risk education (McWhirter, 2008). Cross-curricular activities, play, problem-solving situations, role-playing scenarios, trial and error exercises may provide young children opportunities to face and assess uncertainty and novelty.

4. Conclusions

By providing children the opportunities to manage their own risks and decisions in a familiar environment, they get exercised in confronting unpredictability not only in the classroom but more broadly in the world, not only at that moment but later on in their lives too (Gill, 2007). Under these lines, it is important that risk education programs are introduced, at a fundamental level in early childhood curricula; so that risk literacy is integrated as part of lifelong learning skills and capacities. Risk or Safety Education may produce and encourage risk-takers or risk-aversers depending on personal traits, socio-cultural factors, educational models, modern challenges and contemporary needs and hazards. Further research should move in this direction as contemporary society needs risk acknowledgeable individuals in order to act reasonably and effectively and confront the new-fangled and multileveled challenges both at personal and collective level.

References