
Editorial

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This special issue is oriented towards one of the most pervasive and intriguing questions in education and learning: How to sequence and combine the control of external conditions with developing the learner's awareness and self-regulation?

Though many courageous attempts to essentially answer this pivot question we found authors who wanted to make a pragmatic approach in this direction as well. The effect of both experimental and conceptual explorations can be found in this special issue in front of you. Exactly in the era of the 'New learning' and 'Constructivistic learning paradigms' we may expect a sturdy interest for our findings here. At the same time, however, it is highly thinkable that you feel alienated in this myriad of questions and theorems. For those of you who want to make up your mind more quickly, we provide you here with the panorama of bolder positions that may help you in finding pragmatic optima all together. For that need, a synoptic conclusion will be formulated at the end of this editorial.

- 1 In their article 'Meta-tutor: an online environment for knowledge construction and self-regulated learning in clinical psychology teaching' by Eduardo Peñalosa-Castro and Sandra Castañeda-Figueiras, they assert that many online courses of psychology reported in literature are web-based versions of traditional courses. They are based on a flawed model of how people learn, equating education to transmission of information. This model underlies the lecture-based classroom approach used in many university courses, as well as the online translations of these courses. In this study, an alternative is proposed and evaluated empirically: a learning environment based on a sound instructional design, including knowledge constructing and self-regulated learning features. Results show that learners using this environment perform better than controls in several tests. Implications for online learning environments construction are discussed.
- 2 Tahir Billo presents under the title 'Knowledge building in collaborative learning: towards enhancing the response of primary schools to the impacts of HIV/AIDS'. His article asserts that schools have an overall responsibility to prepare learners for life. Where HIV/AIDS has become a development challenge, fulfilling this responsibility is even mandatory. Yet this has never been an easy task for schools. Learning and knowledge building are complimentary. From the perspective of knowledge building, learning is seen as a by-product of knowledge building effort and that schools need to be knowledge building organisations than just educational

service delivery institutions. This requires a shift in the role of schools. This paper presents a theoretical view of schools' role transformation with the goal of advancing the frontier of schools' knowledge in responding to the impacts of HIV/AIDS. A necessary condition for collaborative knowledge building is that learners bring individual prior knowledge into the learning situation and clarify differing views and opinions in the course of interactions. This new knowledge emerges neither naturally nor spontaneously and needs to be fostered based on understanding of how new knowledge emerges in social interactions.

- 3 Lou Slangen and his colleagues address the terms mind tools, thinking skills, habits of mind, ICT and technology, Techno-Logica, Lego Mindstorms, control software, hybrid micro-worlds and micro-worlds. Under the title 'A case study about supporting the development of thinking by means of ICT and concretisation tools', they signal that improving learning and thinking in school have been an objective of the educational community for a long time. Computer applications and especially mind tools can be helpful in reaching this objective. Control software that regulates a connected physical micro-world can be used as a mind tool. It delivers possibilities to develop and support learning and thinking of pupils in school. They studied pupils' thinking behaviour (thinking skills and habits of mind) by analysing the progressive discourse of pupils who solved problems using Techno-Logica control software in a hybrid micro-world. A first version of an observation instrument was developed and tested for its usefulness in exploring thinking behaviour. Their article presents the first results and prospective.
- 4 Ruddy Lelouche and Tho Toan Ly pose the rhetoric question: Like paedagogical design, can also educational system design benefit from a framework-oriented approach? They claim that instructional designers and teachers, at all levels of education and training, try to put in commonly shared practices that finally affect the paedagogical. The instructional environment, and in particular the design and development of educational systems, can benefit from similar knowledge sharing, especially because of the difficulty, length and cost of this development process. This article shows how building educational systems can be more effective and beneficial using a framework-oriented approach. In order to do so, they describe different levels of abstraction in the design and the development of an Intelligent Tutoring System (ITS). By rephrasing what an ITS is, they show its advantages and drawbacks, and identify different knowledge types. To tackle the limitations of ITS construction, a framework was built. It included guidelines and tools to ease its development. Finally it was shown that a collaborative framework-oriented approach is feasible; it allows building such a framework. Reusability and extensibility is promoted in many aspects of the design and the development of ITSs.
- 5 Ralph Hooreman et al. experimented the 'Effects of synchronous coaching in teacher training'. They claim that historically the nature of coaching teachers is asynchronous: a reflective discussion with the supervisory coach is the follow-up after a lesson has been taught. It was expected that synchronous (immediate) coaching complements and indeed supplants the asynchronous feedback. Nonetheless, in order to investigate the additional effects of combining synchronous and asynchronous coaching, it is essential to obtain an insight into the effects of synchronous interventions separately from the asynchronous condition. Test subjects

were assigned randomly to two conditions: synchronous vs. asynchronous. The participants were required to show teacher behaviour on the basis of video fragments. An observer scored the quality of this pedagogical action. It appeared from this study that synchronous coaching had significantly greater effects than the asynchronous condition on the quality of the pedagogical action of the trainee teacher.

- 6 In the reflection by Stoyanov, Mileva and Mediano under the title ‘The effect of adaptive performance support system on learning achievements of students’, they compared the effectiveness of two performance support systems, adaptive and non-adaptive, on learning achievements of engineering students. The research design, in addition, controls for a possible effect of learning style. The analysis revealed that students working with an adaptive performance support system score significantly higher than students using a non-adaptive performance system on a performance test across different learning styles. The only variation in the two experimental conditions, manipulated in the study, is embedded adaptive arrangement based on learning style. The embedded adaptation mode proved to accommodate learning preferences of students through the structure of learning content as an association between types of learning content and different learning styles which is assumed. Learning style does not produce a significant difference in the performance achievements of students and there is no indication for an interaction effect between performance support system as a method of instruction and learning style. The results are explained by two theoretical positions introduced in the background of the study, namely coping behaviour, and the distinction between level and style type of cognitive constructs.
- 7 In ‘Towards understanding self-organisation: How self-regulation contributes to self-organisation?’ Adel Agina presents the construct of Self-Regulation Learning that emerges in several areas of knowledge not only as a multidisciplinary, but also as an interdisciplinary research such as philosophy, psychology, cognitive science and motivational learning. This article involves two parts. The first one is an analytical study which aims towards understanding self-organisation through analysis the effect and contribution of self-regulation on self-organisation by considering the answer of two questions. The first question is: Why naming one definition and model of self-regulation is complex? And, the second is: How self-regulation contributes to self-organisation? The base of raising these questions is what has been reported out by Boekaerts and Corno (2005) concerning self-regulation in the classrooms is that ‘There is no simple and straightforward definition of the construct of self-regulated learning’. The analysis came up with the conclusion that Self-organisation is the sum of all self-regulations. The second part of this article is an observational results of some common experimental instructions (do’s and don’ts) that the author used with 103 children less than seven years young (range = 2–6 years). Agina asserts that the importance of answering this question is that the amount of self-regulation is strongly influenced by the amount of external control, i.e. the more external control leads to less self-regulation and vice versa.

Final remarks. Though experimental conditions allow us to look to the bare facts, it cannot take away the hesitation if we as educationalists have the rational for making sound decisions on internal vs. external control in specific cases.

The key message of this special issue is that the balance between the two is a dynamic one. The actual domain is the students' prior reliance on direct instruction vs. problem-based learning and the teacher's attitude towards students' 'mood' to take more responsibility; they are all valid ingredients for the actual balance between internal and external control. This last term is of course a disputable one as it suggests that finally the learner achieves self-regulation through control. The research by Hooreman, Jochems and myself has indicated that in case of teacher training, some counter-intuitive empirical outcomes may strike us. And it illustrates that the fundamental nature of the discussion on the prevalence of internal/external control may blur a next stage of clear views and genuine understanding of the process. Therefore, it is the case in the balance between internal/external control as an ingenious observer may detect that once the learner has accommodated to one of the extreme orientations, it is hard to arrange two experimental conditions that match both the subjective experience of the test person and still carries the objective signs for its later generalisation. In other words, we as researchers have to struggle with situational optimums that represent both the pure criteria in the conceptual- and relative criteria in the paedagogical sense.

In respect to the topic of our special issue, here it seems relevant to say that instructionistic external control and the paedagogical endeavours to provoke the learners' internal self-organisation are complementary and need each other. The exemplary experiments in the prior articles will help you to establish the 'sound range' in which for the sake of learning and the learners' maturation this optimum can be found. We hope that you gather inspiration from this subtle recommendation to sharpen your observations so that despite the students' uniqueness you may feel happy to balance the two elements in control.