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REVIEW ARTICLE

Research on Emotion-Oriented Design Teaching Based on Information Visualisation

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Abstract

Introducing emotion-oriented methods into teaching turns a classroom into a place where feeling as well as knowledge is exchanged. In design teaching, an instructor must attend not only to the transmission of knowledge but also to the affective exchange with students. This article examines how information visualisation can carry an emotion-oriented teaching method, one that threads the affective dimension of knowledge through the relation between teacher and student. Such a method helps a teacher recognise and support the positive development of students' learning behaviour, raises the value of the teaching itself, and offers a practical means of moving design education towards an integration of feeling with intellect.

Keywords: emotion-oriented, teaching, affective factors, teaching method, emotional need

1 Introduction

Design knowledge and information are abundant and diffuse, and they fill the studios and classrooms of design schools. The channels through which students receive information keep changing, and design teaching is the principal channel through which design students receive it. The use of information visualisation in teaching undeniably helps students to grasp the knowledge a course presents. Exploiting its emotion-oriented function, so that teaching and learning, transmission and reception all carry a positive affective expression, is one route by which design education can strengthen and direct its work.

2 The Emotion-Oriented Character of Information Visualisation

'Information design is the design of information forms in accordance with the needs of a specific body of users, and it aims to improve the rationality, the usability and the visibility of the information's logical structure.'[1] 'Information visualisation is the science and the art of studying how we 'look at' information. To look is not only to look (*look*), but to see and understand (*see*).'[2] Information visualisation follows the principles of visual perception, accords with the regularities of reading and recognition, and, in accordance with the principles of formal beauty, establishes a psychological-emotional model or an image in the viewer's visual focus and inner life. Such a model or image tends to carry both subjective and objective emotional cognition and emotional expression. The reason is that the graphic, chromatic and typographic visual elements of which a visualisation is built are themselves affective, and this lends the visualisation an anthropomorphic, emotion-oriented character: latent inner feeling, an emotion that can be seen and sensed, a shared grammar of emotional expression. This emotion-oriented character makes the reception and transmission of information more arresting — it draws the eye and moves the viewer — and makes the information easy to understand and smooth to pass on.

3 The Emotion-Oriented Character of Information Visualisation and Design Education

3.1 Problems in Contemporary Design Education

Rising national economic output, industrial restructuring and the steady improvement of art and design programmes in universities have not removed the problems. The dominant tendencies in design education today are these. Students hold too little theory and understand the architecture of their discipline poorly. Teaching is formulaic and knowledge passes passively. Though design is an amalgam of disciplines, students' intake has become one-dimensional, constraining independent creation. Employment pressure strengthens skills training at the expense of a mode of thinking. Traditional

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models change slowly, dulling the enthusiasm of students and teachers alike. Design education now needs to find a more comprehensive and genuinely new way of teaching in order to improve itself.

3.2 The Emotion-Oriented Character of Information Visualisation and Design Teaching

Information visualisation is, first and foremost, a formal instrument for attracting attention and conveying information directly and effectively, so as to improve the understanding of that information. By visual means it renders the complex and hard-won concepts, information and design cases of design education visible. It allows educational content, theoretical knowledge and modes of design thinking to be set out within a short space of time, so that students and teachers can develop the material efficiently and learn from one another. When an emotion-oriented visualisation enters design teaching, students do not merely see design theory and design cases; they see them clearly. It is a teaching method of practical value.

4 Design Teaching Under an Emotion-Oriented Information Visualisation

4.1 Potential Effects on Design Teaching

Design education is the process of teaching design knowledge and design ideas while drawing on a national cultural tradition. Design teaching built on emotion-oriented information visualisation takes emotion as the governing direction of the visualisation: it starts from the affective reception and sensory experience of the student as audience, mobilises the student's inner energies, and thus activates subjective initiative. It is a guiding strategy in which feeling is deliberately at work. Such teaching attends closely to the student's participation and to the sensory and affective skills exercised in the course of design teaching. The potential effects are three.

First, it meets a latent emotional need. The audience of design teaching is a group of energetic young individuals still in the course of maturing, and the process of growth leaves many unstable factors in them. In learning design, the encounter with new material and new knowledge will inevitably produce affective striving and affective confusion. An emotion-oriented visualisation can draw on plural modes of affective transmission to guide and satisfy the student's needs, and so to affect the final outcome of the teaching.

Second, it guides cognition and enriches experience. Emotion-oriented information visualisation uses visual elements rich in feeling to help students, in the course of learning design, to master knowledge and skill and to grasp the meaning that design knowledge and design culture carry. It is a more vivid and more truthful mode of communication.

Third, it builds a good working relationship between teacher and student. The exchange between them becomes more active and more concrete. The method attends to participation and to sensory and affective capacity, and folds the teacher's own feeling into the teaching so as to draw the student towards design. A method that carries feeling lets the student learn at ease and the teacher teach with pleasure, and so arouses curiosity and mobilises initiative.

4.2 Teaching Strategies

4.2.1 Transforming the Form in Which Information Exists in Design Teaching

Theoretical information in design teaching is usually passed on to students in an abstract or invisible form, which makes learning, understanding and the acquisition of knowledge difficult. Emotion-oriented information visualisation converts formless information into a form that is visible and threaded through with feeling, and so makes it easier for students to take in directly, to understand and to grasp the knowledge a design education contains. Used this way, it moves learning from the passive to the active.

4.2.2 Enriching the Affective Vocabulary of Design Teaching

Design teaching can draw on the liveliness of information visualisation and on its capacity to be readily understood. A rich affective vocabulary combines the many audiovisual elements available in design teaching with plural ways of feeling, and so widens the channels through which information travels in the classroom and makes the substance of design study more accessible to students of different dispositions, moods and levels. Because teaching works through experience, a wider affective palette brings in more sensory modes: layout, image and text, selected and set, convey order and hierarchy so that understanding moves faster; and the colour, style and form of visual information act on the level at which a student receives it, so that an ordered emotional experience lets the student grasp demanding content with less cognitive overload.

4.2.3 Analysing Design Teaching Along Several Dimensions

Design teaching can also work on several dimensions at once — several modes of expression, several registers of aesthetic awareness, several media — so that abstract information in the educational process is guided and transmitted by affective means. Emotion thus sets the atmosphere and the ground of the teaching; the student looks through the surface of

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knowledge to recognise its underlying substance, and design learning and cognitive understanding are lifted to a higher level. A multi-dimensional reading of the feeling expressed and guided in design teaching gives the acquisition of design knowledge a genuine quality of experience; joining the affective to the rational lets teacher and student communicate without obstruction, with knowledge understood accurately and plainly. Binding the sensory, the cognitive and the emotional dimensions of design information allows knowledge to be passed on more systematically and completely.

Alongside these three strategies — transforming the form of information, drawing on a wider affective vocabulary, analysing across dimensions — a teacher who adopts them must also know the material, be able to make visual judgements about information graphics, and cultivate the ability to read students' psychology and habits and to use emotion-oriented guidance in the classroom. 'Teaching requires the continuous investment and management of the teacher's intellect; it also requires the teacher's careful cultivation of feeling. In this sense education is not only a cognitive or a technical practice but an affective one.'[3] Emotion-oriented design teaching is accordingly a new test for the practice of design education.

4.3 The Significance of Putting It into Practice

'Although education is not a service in the ordinary sense, what a learner consumes is by no means only the knowledge and experience of the educator; they also consume the educator's feeling and attitude.'[4] An emotion-oriented visualisation is therefore not merely a teaching strategy. From the standpoint of the design disciplines it carries real significance.

4.3.1 Within the Discipline's Own Teaching

For the study of design theory, emotion-oriented visualisation gathers, systematises and orders the information bearing on design theory. It takes up problems from neighbouring fields, clarifies the main content and the methods of study at each stage, and specifies the purpose of study so as to give design teaching and learning a core experiential goal; and it builds a hierarchy of theory according to the primary and secondary presentation of content. For design practice, it guides both the conduct of design teaching and the presentation of its results. A teaching method that is situated and emotion-oriented is a more effective instrument. 'Emotion bears doubly on human practice: under certain conditions it has a positive effect, and under other conditions it has a negative one.'[5] Emotion-oriented guidance fosters cognition and exerts a positive force.

4.3.2 Across Teaching as a Whole

Judged by its teaching value, the emotion-oriented character of information visualisation pursues a substantial affective goal. It is a humane and constructive learning orientation, one basic index of teaching evaluation. It orients aesthetic values affectively and advances aesthetic education, opens a path to ethical cognition, and exercises the approach's latent educational function, correcting the traditional model by placing experiential transformation at the centre. The approach helps a teacher to complete cognitive goals, enriches the experience of the teaching process, and brings about an affective exchange between teacher and student that creates good conditions for learning.

5 Conclusion

The uses of feeling, the infectiousness of learning and the capacity for communication that emotion-oriented information visualisation holds within design education are matters our teaching ought to attend to. The spread of such a method helps students to explore the content, the character and the regularities of knowledge, and it meets the student's inner need for learning and for the recognition of knowledge; it lets the educational process rise to the level of attending to the student's psychology, and brings teaching and learning into genuine integration. This study of the strategy for using emotion-oriented information visualisation in design teaching enriches the study of teaching methods, and marks a further feasible direction for the development of education and teaching.

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