

Pre-print of the Greenwich Conference proceedings, to be published in February 2010. Verpoorten, D., Renson, J.-M., Westera, W., & Specht, M. (2009, September). *Personalised learning: a familiar concept to teachers? And which teachers? - A questionnaire-based survey of 43 secondary school teachers*. Paper presented at the "Making it personal!" Conference, Greenwich, UK.

Personalised learning: a familiar concept to secondary teachers? And which teachers?

Dominique Verpoorten*, Jean-Marie Renson**, Wim Westera*, Marcus Specht*.

*Centre for Learning Sciences and Technologies – Open University of the Netherlands.

** University of Liège (Belgium)

Keywords: Personalisation, personalised learning

This paper presents the main results of a questionnaire survey that sought to evaluate secondary school teachers' familiarity with the notion of personalised learning and to relate it to personal, sociological and professional characteristics. The outcomes of this work are both an exploratory study aimed at defining more focused questions about the theme of personalisation, and the first tryout of the questionnaire designed to gather data. Although this was thus a preliminary study which did not lay claim to any more general scope, it still enables some hypotheses to be framed and examined in the light of the answers of 43 practitioners.

Rationale

Personalised learning has been the subject of considerable attention at the following levels:

- Educational policy (Bonal & Rambla, 1999; DfES, 2004; Leadbeater, 2004);
- School management (Lambert & Lowry, 2004; West-Burnham & Coates, 2005);
- Classroom practice (Martinez, 2002; Polhemus, Danchak, & Swan, 2004; Tomlinson, 1999)

Surveys have been conducted on specific personalisation strategies based on learning styles (Coffield, Moseley, Hall, & Ecclestone, 2004; O'Connor, 1999), level of learner control (Czarkowski & Kay, 2003), type of feedback (Economides, 2006), meta-cognitive awareness (Gama, 2004), etc. However, we could not find any study of how the general issue of personalisation is perceived by teachers, as opposed to how it is perceived by pupils (Waldeck, 2007). The research endeavour was therefore to explore the degree of awareness of the concept of personalised learning on the part of the teaching staff at a particular school. The study also aims to relate the expressed familiarity (in terms of knowledge and practice) to various personal, social and professional characteristics of the respondents.

Context and methodology

To investigate teachers' familiarity with the concept of personalised learning, we collected and processed 43 questionnaires filled in by secondary teachers of the European School Mol (Belgium) during a staff training day dedicated to different aspects of personalisation. The literature did not bring about any existing instrument fitted to our purpose. The questionnaire (Verpoorten, Logan, & Aviram, 2006) was therefore designed for the present survey (see appendix). 19 distinct hypotheses underlie the questionnaire. The paper presents the results with regard to 7 of them only, that we consider as less affected by methodological defaults (see "Lessons learnt" section) and the most useful as input for reflection about personalisation.

Results

Outcomes are twofold:

- the survey enabled the questionnaire to be tested in terms of overall relevance and requirements for additional or reformulated questions;
- the survey allowed a few interesting observations to be made. These should be regarded not as confirmations of the underpinning hypotheses in the strict sense of the word, but rather as empirical indications about the dimensions of the object of investigation: the familiarity of teachers with the notion of personalised learning and the association of this level of familiarity with respondents' characteristics. At best, can the results help to identify some trends with regards to differences between familiar and non familiar practitioners.

Observation 1 (hypothesis 1): the concept of personalised learning is not familiar to teachers, with less than 50% of those questioned claiming to be familiar with it, and the definitions ascribed to it are relatively variable.

Observation 2 (hypothesis 6): familiarity with the concept is linked to earlier experience of personalised learning as a learner. Although only 28% of the teachers assert they had earlier experience of personalised learning, 67% of that group were familiar with the concept (see figure 1).

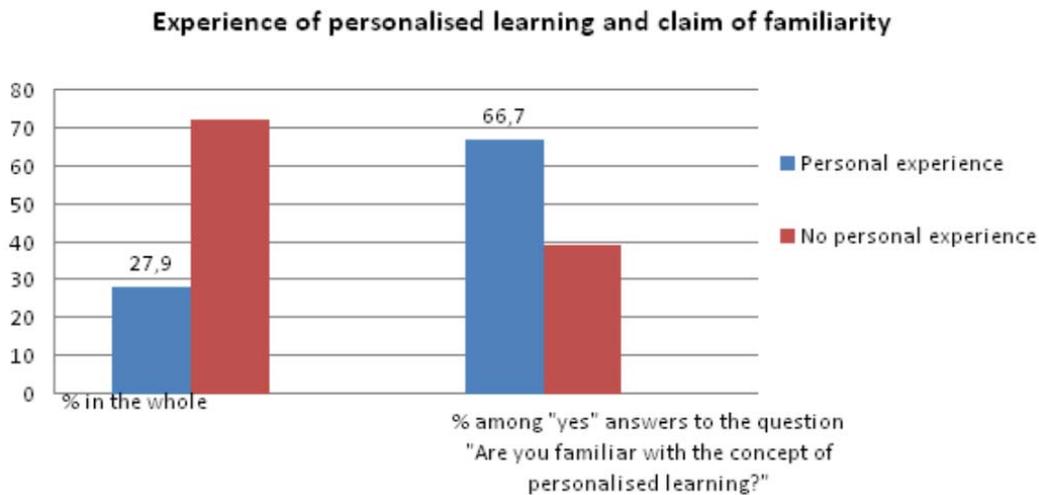


Figure 1: The more a teacher experienced personalized learning as a student, the more familiar he claims to be with the concept of personalisation

Observation 3 (hypothesis 10): familiarity with the concept is closely connected with the degree of urgency attributed to it, which seems fairly logical. For +/- 30% of teachers, problems of structure (number of pupil, heterogeneous classrooms) take priority over personalised learning. Other competing concerns mentioned are: lack of pupils' autonomy, inappropriate pupils' attitude to learning, administrative burden, lack of interdisciplinary approach, rhythm of educational reforms.

Observation 4 (hypothesis 9 & 11): claims to practise personalisation are linked to familiarity with the concept, which also makes sense. Assiduity to personalises learning appears to be related to people rather than to the perception they have of their primary function as a teacher.

Observation 5 (hypothesis 15): most teachers think that personalised learning is desirable for all pupils, but the justifications given are fairly variable. In open comments, individualisation is cited most often, followed by effectiveness and improved results and, finally, motivation. In any case, 56% of the teachers declared that the practice of personalisation is possible in all teaching fields. Others said that it is often linked to particular conditions (time, physical layout, etc.) and to class management (size, discipline, etc.).

Observation 6 (hypothesis 17): 85% of teachers think it is possible to increase personalised learning in their classes, under certain conditions: firstly, the availability of extra time, secondly, receiving more training in the concept, thirdly, obtaining practical assistance on how to introduce it in class, and finally, obtaining resources in terms of equipment (computers, suitable classrooms).

Observation 7 (hypothesis 18): allegations to practise personalisation are linked to class size. In the sample, the majority of classes were smaller than 15 pupils (+/- 57% of answers), and 55% of teachers of classes of this size practise personalisation, compared with 60% of teachers for the 21 to 25 pupils category, which itself accounted for 8% of the answers given. Thus it can be seen that the degree of practice of personalisation, while linked to class size, is not necessarily proportionate to it. In classes of more than 30 pupils, the practice of personalisation could not be observed any further.

Lessons learnt

Lesson 1 – The questionnaire must be revised

Each of the 19 hypotheses was formulated and accompanied with a reason for putting it forward. At the end of our research, we consider that most of those rationale are still valid and deserve further investigation.

Nevertheless, this first version of the questionnaire was not able to capture proper data for each hypothesis. After pre-treatment, we decided to thoroughly treat only seven of them. Flaws and biases generally observed come either from an inadequate formulation of questions or from a dispersal (see lesson 2) of the sample in too many groups (for instance, when the taught subject matter is concerned).

Lesson 2 – The sample must be expanded

The answer to the key question "Is the concept of personalised learning familiar to you?" divided the group of 43 teachers into two, creating two groups of roughly 20 people each. This is valid as a discriminating variable in an exploratory survey, and justifies a series of analyses of relationships between this dichotomic variable (familiar

versus non familiar) and others. Classifications producing smaller groups do not provide sufficiently reliable discriminating variables. We made occasional mention of results relating to restricted numbers, but only as input for the process of refining the approach.

Lesson 3 – The two main discriminating variables must receive more attention

The study is based from start to finish on the comparison of various items of data in pairs. In most cases, the tables compare the answers given by the teachers who stated that they were familiar with the notion (part one of the questionnaire) or with the practice (part two of the questionnaire) of personalised learning with those given by the teachers who said that they were not. However, those very influential classifications bears only on two questions, which is too scarce.

Lesson 4 – A confrontation with objective data would be welcome

The research is based exclusively on the statements made by the participants. No reality check was performed here and discrepancies between what is expressed and real actions of personalisation in the classrooms are very likely.

Lesson 5 – Perceived impact of personalisation

The questionnaire omitted to question the familiarity of teachers in association with its perceived efficacy. A further version could incorporate this dimension. In the literature, personalisation has found its supporters and its critics, with some even questioning the effectiveness of personalising learning in the first place (Hattie, 1993; Marzano, Pickering, & Pollock, 2001), while others have recommended personalisation with caution (Ferguson, Schmoller, & Smith, 2004; Ronen, 2006). The same split could take place amongst teachers.

Possible implications for practice

In the field of technology-enhanced learning, millions of euros have been – and still are – spent for European projects dealing with personalised learning (the most often envisioned as performed automatically). In a European school which participated in such a European project and which, additionally, can be expected to be open to a variety of educational influences and has a reputation of openness to innovation, the teaching staff, according to its own claims, does not seem as aware about the notion and the practice of personalised learning as it could be expected. If this observation is not fully imputable to flaws in the survey, it points at a basic level of initiative needed for further enhancement in personalisation: taking into account practitioners' representation of and familiarity with the topic.

Responses to the session

Some of the key questions and observations that came out from the discussion at the end were:

1. Are the European or Belgian schools pushing personalisation as much as their British counterparts?

Not really or not in these terms, according to the presenter (who was the only non English person). In Belgium, educational policy puts emphasis on the word "remediation" or "social diversity of schools populations". In European schools, personalisation is approached through the word "learning support" for which there are specific budgets. As a Belgian, the presenter got acquainted to the word "personalisation" because it was one salient key aspects of the iClass project that funded the survey. A participant notes that, even in the United Kingdom, personalisation can be more a political term than a reality discussed or practised at the classroom level.

2. Should not the discussion around personalisation be centred upon a personalisation by individuals rather than a personalisation for individuals?

The presenter fully agrees. However, he observes that, in the context of European projects, personalisation is (too) much coupled with technically-driven lines of inquiry: adaptive systems, artificial intelligence, knowledge ontologies, etc. (Keenoy, Levene, & de Freitas, 2007). Approaches that make much room to self-regulated personalisation or to supporting tools helping tutors and students to tailor personalised instruction are very needed (Maragliano, 2004; Verpoorten, 2009). On this respect, participants to the discussion converge in saying that the sources for having an opinion on a student, and on subsequent personalisation or guidance, are currently too scarce. A common situation in the educational system is that most decisions of the actors are taken on the narrow basis of exam grades. Experiences of class councils quite often show that the same remarks about the same students come again and again. One step towards enhanced practice of personalisation by end-users (teachers and students) would be an increased availability of "learning indicators" that sustain, in a long term ("historical") perspective, awareness of enduring problems, critical moments of insights and progress. This approach (Verpoorten, Glahn, Kravcik, Ternier, & Specht, 2009) may turn out to be more efficient than automatic learning paths structuring and might foster the sense of personalisation even in regular courses.

When you put some of the graphics, side by side, there are inconsistencies.

This is true. The exploratory character of the study was underlined in the abstract and the presentation did not hide methodological problems. Because not much is known about the personalization envisaged from teacher's viewpoint, preliminary work needs to be done for gaining familiarity with the dimensions of the phenomenon and the instruments (questionnaire) likely to enlighten the practitioners' position. Despite methodological faults, the presentation served as lever to interesting discussion, which is another possible use thereof.

References

- Bonal, X., & Rambla, X. (1999). The Recontextualisation Process of Educational Diversity: new forms to legitimise pedagogic practice. *International Studies in Sociology of Education*, 9(2), 195-214.
- Coffield, F., Moseley, D., Hall, H., & Ecclestone, K. (2004). *Learning styles and pedagogy in post-16 learning. A critical and comprehensive review of learning style research, highlighting 13 core learning styles*. London: Learning and Skills Research Centre.
- Czarkowski, M., & Kay, J. (2003). *How to give the user a sense of control over the personalization of adaptive hypertext?* Paper presented at the Workshop on Adaptive Hypermedia and Adaptive Web-Based Systems, User Modeling Session.
- DfES. (2004). A National Conversation about Personalised Learning. Retrieved July, 2007, from <http://www.standards.dfes.gov.uk/personalisedlearning/downloads/personalisedlearning.pdf>
- Economides, A. (2006). Adaptive Feedback Characteristics in CAT. *International Journal of Instructional Technology & Distance Learning*, 3(8).
- Ferguson, N., Schmoller, S., & Smith, N. (2004). Personalisation in presentation services - A report commissioned by the UK Joint Information Systems Committee (JISC). Retrieved July, 2007, from <http://www.therightplace.net/jp/>
- Gama, C. (2004). *Integrating Metacognition Instruction in Interactive Learning Environments*. Unpublished PhD, University of Sussex, Brighton.
- Hattie, J. A. (1993). Measuring the effects of schooling. *SET*, 2, 1-4.
- Keenoy, K., Levene, M., & de Freitas, S. (2007). Personalised Trails: How Machines Can Learn To Adapt Their Behaviour To Suit Individual Learners. In S. e. al. (Ed.), *Trails in Education: Technologies That Support Navigational Learning* (pp. 33-58): Sense Publishers.
- Lambert, M. B., & Lowry, L. K. (2004). *Knowing and being known: Personalization as a foundation for student learning*. Seattle: Small Schools Project.
- Leadbeater, C. (2004). Pamphlet - Learning About Personalisation. Retrieved July, 2007, from <http://www.demos.co.uk/publications//learningaboutpersonalisation>
- Maragliano, R. (2004). The machine has been delegated a problem which is and remains primarily a teaching problem [Electronic Version]. Retrieved 23-08-2004 from http://www.elearningeuropa.info/directory/index.php?page=doc&doc_id=5148&doclng=6.
- Martinez, M. (2002). Designing learning objects to personalize learning. In D.A. Wiley (Ed.) *The Instructional Use of Learning Objects* (pp. 151-173). Bloomington: Agency for Instructional Technology.
- Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom Instruction That Works: Research based strategies for increasing student achievement*. Alexandria, VA: Association for Supervision and Curriculum Development.
- O'Connor, T. O. (1999). *Using Learning Styles to Adapt Technology for Higher Education*. Retrieved 23-01-2008, from www.isu.indstate.edu/ctl/styles.
- Polhemus, L., Danchak, M., & Swan, K. (2004, June 2004). *Personalized Course Development Techniques for Improving Online Student Performance*. Paper presented at the Conference of Instructional Technologies (CIT), Stonybrook, New York.
- Ronen, Y. (2006). *iClass Report to partners - Customized personal learning (CPL): Its effectiveness in improving learning results*. Tel Aviv: Ben Gourion University.
- Tomlinson, C. A. (1999). Mapping a route toward differentiated instruction. *Educational Leadership*, 57(1), 12-16.
- Verpoorten, D. (2009). Adaptivity and autonomy development in a learning personalization process. *Policy Futures in Education*, accepted.
- Verpoorten, D., Glahn, C., Kravcik, M., Ternier, S., & Specht, M. (2009). *Personalisation of Learning in Virtual Learning Environments*. Paper presented at the ECTEL 09 (submitted).
- Verpoorten, D., Logan, K., & Aviram, R. (2006). *Beliefs and expectations about personalised learning – A pre-questionnaire*. : iClass project.
- Waldeck, J. H. (2006). What Does “Personalized Education” Mean for Faculty, and How Should It Serve Our Students? *Communication Education*, 55(3), 345-352.
- Waldeck, J. H. (2007). Answering the Question: Student Perceptions of Personalized Education and the Construct's Relationship to Learning Outcomes. *Communication Education*, 56(4), 409-432.
- West-Burnham, J., & Coates, M. (2005). *Personalizing learning : transforming education for every child*. Stafford, UK: Network Educational Press.

Appendix

Familiarity with personalised learning

We want to explore teacher beliefs about and practice of personalised learning (PL) and what the perspectives are of teachers in lower and upper secondary schools of PL? To achieve this we would be grateful if you could complete the following short survey.

A. Demographic information

1. Age:
2. Gender:
3. Number of years experience teaching:
4. Main discipline taught:
5. Age range or Grades taught in this subject:
6. Average number of pupils per class:

B. Awareness

1. Are you familiar with the concept of PL?	Yes / No
2. What do YOU define personalised learning as?	
3. Have you experienced personalised learning during your own studies (as opposed to your teaching)?	Yes / No
3a. If you answered yes to question 3, please describe your experience/s	
4. I would describe the education I received at home as: (Multiple answers possible)	<input type="checkbox"/> Open <input type="checkbox"/> Rigid <input type="checkbox"/> Secular <input type="checkbox"/> Religious <input type="checkbox"/> Disciplinary <input type="checkbox"/> Ideological <input type="checkbox"/> Loving
5. I would describe the education I received at school as: (Multiple answers possible)	<input type="checkbox"/> Open <input type="checkbox"/> Rigid <input type="checkbox"/> Secular <input type="checkbox"/> Religious <input type="checkbox"/> Disciplinary <input type="checkbox"/> Ideological <input type="checkbox"/> Loving
6. I would primarily describe my daily activity in classrooms as: (Answers mutually exclusive)	<input type="checkbox"/> a job <input type="checkbox"/> a mission <input type="checkbox"/> Stopgap
7. What level of urgency do you believe personalised learning has at school?	None // Low // Average // High // Maximum
8. Could you elaborate the reasons for your level of belief in question 7?	

C. Attitude and expectations

1. Do you practice personalised learning in your classes? (Please indicate for which subject/s)	
- Subject:	Never // Sometimes // Regularly // Often
- Subject:	Never // Sometimes // Regularly // Often
2. How do you implement/practice personalised learning in your classes?	
3. Do you believe personalised learning is desirable for all students?	Yes / No
4. Why do you believe this?	
5. Do you believe personalised learning is possible in all disciplines?	Yes / No
6. Why do you believe this?	
7. Would you, with your current resources, be able to increase the level of personalised learning in your courses?	Yes / No
9. What would help you to practice more personalised learning in your teaching?	

Thank you for your time in completing this questionnaire.