Pedagogical affect, student interest, and learning performance

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Abstract

Using a sample of more than 1000 students, this study reveals that students’ perceived learning depends directly on their interest, pedagogical affect, and their learning performance and indirectly on the student–instructor interaction, the instructor’s responsiveness, course organization, the instructor’s likeability/concern, and the student’s learning performance. Likeability/concern indirectly affects student interest by influencing learning performance. The results yield recommendations for schools, department heads, and university administrators.

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1. Introduction

Educators play a major role in the formation of students’ personal identities by stimulating their development into active members of society (Willemse et al., 2005). Through the act of education, teachers expect to transmit a broad body of knowledge to learners. Teachers and students should work together and dedicate themselves to the learning process and to their school’s objectives. Schools with a clear vision of teaching and learning goals can make students and teachers more productive (Silins and Mulford, 2004).

Issues relating to perceived learning (e.g., student evaluation of instructors, course organization, student interest) receive scant attention in the literature (e.g., Engelland et al., 2000; Paswan and Young, 2002; Young et al., 2003). However, because of innumerable measurement difficulties, the literature includes no consensus regarding key influences of teaching effectiveness and students’ learning (Marks, 2000). The lack of a solid theory in the field, together with a diversity of measures, affects the reliability of existing findings because researchers question whether existing findings are a consequence of independent variables or of flawed operationalization. The goal of this study is to develop an instrument that builds on existing theory in the field to measure important, intangible educational concepts for the enhanced identification of key determinants of student perceived learning.

This article begins with an overview of the current literature and then develops the conceptual framework and the hypotheses. A discussion of research methodology follows. Using data from 1095 students, this study uses confirmatory factor analysis and structural equation modeling to test the conceptual framework empirically. The article concludes with implications for theory and for managerial practice in schools.

2. Conceptual model

Building on previous research, the conceptual model presents the major determinants of perceived learning. To sum up the model briefly, student–instructor interaction, the instructor’s responsiveness, course organization, and the instructor’s likeability/concern have varying affects on pedagogical affect, student interest, and learning performance, which in turn affect students’ perceived learning (see Fig. 1). The
following discussion builds on these concepts and relationships in greater detail.

Student–teacher interaction refers to the opportunity to ask questions, express ideas, and have an open discussion in class. Nonthreatening interactions allow students to ask questions, practice the free expression of ideas, develop their own skills, and improve class discussion (Paswan and Young, 2002). Educators and pupils most frequently recognize nonthreatening interactions as a teaching and learning method (Willemse et al., 2005), and this method has a positive influence on student ratings of instruction (Paswan and Young, 2002). A stronger student–instructor interaction also affects instructor involvement because an engaged instructor invests more in his or her students. Students are attentive and know when instructors are investing in them, and they will recognize these efforts (Paswan and Young, 2002). Thus, student–instructor interaction influences students’ perceptions of pedagogical affect.

**H1.** A higher degree of student–instructor interaction leads to a higher level of pedagogical affect.

The services literature informs the responsiveness concept (Parasuraman et al., 1985). In education, responsiveness is the willingness to help students by providing prompt service. A strong relationship exists between instructor involvement and student interest (Paswan and Young, 2002). Teachers must have the capacity to know students’ needs and respond to them quickly. Responsive teaching implies a capacity to engage in systematic learning from the teaching context and practice and from a more generalized theory of teaching (Hammond and Snyder, 2000). Students are demanding consumers who want good and prompt service, and they know when instructors are involved. When this occurs, students respond in kind (Paswan and Young, 2002).

**H2.** A higher degree of instructor responsiveness leads to a higher level of student interest.

Organization represents the course structure and refers to the systematic relationship between concepts and course direction (Marks, 2000). Educators’ organization, clarity, and comprehensiveness are important in the student learning process (Feldman, 1998). Course organization relates directly related to students’ ability to handle uncertainty. An unstructured course can make students feel uncomfortable and, consequently, has a negative impact on their evaluations of both the instructor and themselves (Marsh, 1987, 1991). Conversely, a more structured and organized course may lead to a favorable instructor assessment and self-evaluation (Marks, 2000; Marsh, 1991). Thus, organization positively affects learning and instructor evaluation.

**H3.** A higher degree of course organization leads to a higher level of pedagogical affect.

Likeability/concern refers to the teacher’s emotional qualities, namely, his or her caring disposition. Students evaluate their instructors beyond their objective teaching and scientific abilities. The duration and nature of relationships between students and teachers influence the processes and outcomes of teaching (Hammond and Snyder, 2000). Teachers should not only be transmitters of knowledge and skills but should also attend to their relationships with students. Students often want to know if instructors are likeable rather than if they are knowledgeable. In many situations, students are more interested in finding out if the proposed lectures are entertaining than if the content is accurate and up-to-date (Cahn, 1987). Teaching style allied with personal attractiveness (i.e., likeability/concern) enhances learning. Combining a degree of entertainment with other aspects of quality teaching is likely to promote student involvement and, consequently, student learning (Marks, 2000).

**H4.** A higher level of instructor likeability/concern leads to a higher level of learning performance.

Learning performance assesses multiple dimensions of learning outcomes, such as students’ self-evaluation of knowledge, understanding, and skills and their desire to learn more (Young et al., 2003). Learning performance is commonly associated with a more positive attitude toward the environment, namely, courses and teachers (Duke, 2002; Dunn et al., 1990). If students have positive attitudes toward learning achievements, teachers are likely to be more willing to commit themselves to their students (Paswan and Young, 2002), which in turn will lead students to evaluate their teachers’ methods more positively.

**H5.** A higher degree of student learning performance leads to a higher level of pedagogical affect.

Motivation variables also correlate with learning outcomes. Students’ perceptions of course outcomes (e.g., an intellectually

Fig. 1. Conceptual framework.
challenging course) help them become more competent (Paswan and Young, 2002) and more interested. When students perceive their learning performance as relevant, they should exhibit an increased interest in the course.

H6. A higher degree of student learning performance leads to a higher level of student interest.

Learning performance relates with perceived learning (Marks, 2000). Education level increases as students pass through the following stages of learning: comprehension: application, analysis, synthesis, and evaluation. These stages help researchers evaluate the extent to which students attain learning outcomes (Duke, 2002). Thus, overall course evaluation is a function of learning performance and instructor evaluation (Gremler and McCollough, 2002). This leads to the following hypothesis.

H7. Higher learning performance leads to higher perceived learning.

Student interest reflects input into the course, such as attention level in class, interest in learning the material, perception of a course’s intellectual challenge, and acquired competence in the field. Student interest facilitates effective teaching and creates a more favorable learning environment (Marsh and Cooper, 1981). Students reject a learning environment that runs contrary to their preferences (Hsu, 1999). When learners are more interested, they perceive themselves as learning more (Tynjälä, 1999), and this will reflect their overall evaluation of the learning process.

H8. Higher student interest leads to higher perceived learning.

Teachers have a major influence in molding student values, especially through their instructional approaches (Willemse et al., 2005). Pedagogical affect refers to students’ positive thoughts about or feelings toward the instructional methods used in class. Students tend to prefer instructional methods that are more experiential and interactive (Frontczak, 1998; Matthews, 1994), encourage understanding, emphasize application, integrate theoretical and practical knowledge, and produce more transferable knowledge (Frontczak, 1998; Karns, 1993; Tynjälä, 1999). Educators must understand the learning process to design and implement teaching methods that align with students’ needs and enhance learning (Hsu, 1999). When teachers use instructional methods that are in line with students’ preferred learning styles, learners develop more favorable attitudes toward their teachers’ pedagogical attributes. This is a pedagogical affect (Richard et al., 2000). A positive attitude toward teaching style leads to higher achievement and learning performance (Dunn et al., 1990; Paswan and Young, 2002; Young et al., 2003).

H9. A higher degree of pedagogical affect leads to higher perceived learning.

3. Survey instrument and data collection

The study incorporated measures used in prior research to develop an initial version of the instrument. People able to understand the nature of the concept of these measures then discussed these measures to produce revisions to the instrument. After revisions, the discussion reports a pretest sample of 30 students to test the reliability of the factors through Cronbach’s alpha. The pretest results helped further refine the questionnaire. Teachers from ten different Portuguese schools then delivered the final questionnaires to the students (for a list of construct, items, reliabilities, and their sources, see Appendix A) to complete in class at the end of 2004. The study comprises 1095 questionnaires from the ten schools. The largest school provided 173 completed questionnaires, and the smallest completed 14. The average mean

Fig. 2. Summary of significant relationships. *Values in upper rows are completely standardized estimates. Values in lower rows are t-values. *p < 0.05, **p < 0.01 (two-tailed tests).
of respondents by school was 110. Of the total number of respondents, 47.5% were male, and 52.5% were female.

4. Findings

A confirmatory factor analysis assessed the validity of the measures, using full-information maximum likelihood estimation procedures in LISREL 8.54. Although the chi-square for this model is significant ($\chi^2 = 1104.16, df = 322, p < 0.00$), the fit indexes reveal a good model. The comparative fit index (CFI), incremental fit index (IFI), Tucker–Lewis index (TLI), and root mean square error of approximation (RMSEA) of this measurement model are 0.99, 0.99, 0.98, and 0.047, respectively. The large and significant standardized loadings of each item on its intended construct provide evidence of convergent validity (average loading size is 0.76). All possible pairs of constructs passed Fornell and Larcker’s (1981) discriminant validity test (see Appendix A).

The final structural model has a chi-square of 1323.24 ($df = 335, p < 0.00$), and the fit indexes suggest a good fit of the model to the data (CFI = 0.98, IFI = 0.98, TLI = 0.98, and RMSEA = 0.052). The estimation results for the structural paths appear in Fig. 2. The results confirm all nine hypotheses.

The findings reveal that student interest is the primary influence on perceived learning, followed by pedagogical affect and learning performance. As prior research (Marks, 2000; Young et al., 2003) has proposed, students learn more when they are motivated and interested in the course. This also confirms the expectation that students learn more in environments in which instructional methods are congruent with their preferences (Young et al., 2003). Thus, instructional methods that teachers use must be effective, useful, and satisfactory. Teachers need to motivate their students to obtain better results.

Course organization has the greatest impact on pedagogical affect, being twice as important as student–instructor interaction and learning performance. An organized course contributes to a more positive student evaluation of teachers and their instructional methods. Because student–instructor interaction is also positively associated with pedagogical affect, this relationship appears to be important in the students’ evaluations of teachers and their instructional methods. If students have a strong and open relationship with their instructors, they will invest more in the learning process and create a more positive opinion about teachers and their methods. The relationship between learning performance and pedagogical affect confirms that students benefit from and enjoy learning processes that have strong interactions (Paswan and Young, 2002).

Responsiveness is the major determinant of student interest, being four times more important than learning performance. This finding reveals the importance of the human factor and confirms that though students might place importance on the learned outcome, when they perceive teachers as investing in and giving attention to them, they react positively and become more interested (Paswan and Young, 2002).

Finally, a strong relationship exists between likeability/concern and learning performance. Students evaluate themselves, their teachers, and their overall learning process through the analysis of their learning performance. Overall, students value instructors while taking into account their personal attractiveness and teaching qualities (Clayson and Haley, 1990).

5. Conclusion

The findings provide valuable information for teachers and school managers, revealing that students appreciate interactive and student-focused methods. Moreover, instructors’ personal qualities and teaching characteristics (i.e., responsiveness, likeability/concern, and instructional methods) strongly influence perceived learning.

The factors that this study reports try to capture the essence of good teaching. First, teachers should use instructional methods that get students involved. Second, instructors must be agreeable and attentive because students evaluate them both as people and as teachers. Third, instructors must be efficient in delivering their service because such responsiveness increases student interest. Finally, instructors should present courses that are well structured and organized because course organization has a significant, positive impact on perceived learning.

Acknowledgements

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Appendix A. Constructs, scale items, and reliabilities

<table>
<thead>
<tr>
<th>Construct</th>
<th>Standardized coefficients</th>
<th>t-values</th>
</tr>
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<tbody>
<tr>
<td><strong>Student–instructor interaction</strong> ($\alpha = 0.82$, $p_{wco} = 0.54$, $\rho = 0.83$)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Scale: 1 = strongly disagree, 5 = strongly agree)</td>
<td></td>
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</tr>
<tr>
<td>V1 Instructor encouraged student to express opinion.</td>
<td>0.81</td>
<td>30.57</td>
</tr>
<tr>
<td>V2 Instructor is receptive to new ideas and others’ views.</td>
<td>0.81</td>
<td>30.87</td>
</tr>
<tr>
<td>V3 Students had an opportunity to ask questions.</td>
<td>0.72</td>
<td>26.08</td>
</tr>
<tr>
<td>V4 Instructor generally stimulated class discussion.</td>
<td>0.59</td>
<td>20.20</td>
</tr>
<tr>
<td>Source: Paswan and Young (2002)</td>
<td></td>
<td></td>
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<tr>
<td><strong>Responsiveness</strong> ($\alpha = 0.78$, $p_{wco} = 0.54$, $\rho = 0.77$)</td>
<td></td>
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<tr>
<td>(Scale: 1 = strongly disagree, 5 = strongly agree)</td>
<td></td>
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</tr>
<tr>
<td>V5 Tell students when they will be served.</td>
<td>0.62</td>
<td>21.56</td>
</tr>
<tr>
<td>V6 Serve students promptly.</td>
<td>0.79</td>
<td>29.42</td>
</tr>
<tr>
<td>V7 Always be eager to provide assistance.</td>
<td>0.79</td>
<td>29.64</td>
</tr>
<tr>
<td>Adapted from Engelland et al. (2000)</td>
<td></td>
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<tr>
<td><strong>Organization</strong> ($\alpha = 0.84$, $p_{wco} = 0.64$, $\rho = 0.84$)</td>
<td></td>
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<tr>
<td>(Scale: 1 = strongly disagree, 5 = strongly agree)</td>
<td></td>
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<tr>
<td>V8 The course was well organized.</td>
<td>0.78</td>
<td>29.63</td>
</tr>
<tr>
<td>V9 The material was presented in an orderly manner.</td>
<td>0.78</td>
<td>29.48</td>
</tr>
<tr>
<td>V10 Instructor presents material in a clear and organized manner.</td>
<td>0.83</td>
<td>32.10</td>
</tr>
<tr>
<td>Source: Marks (2000); adapted from Paswan and Young (2002)</td>
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<tr>
<td><strong>Likeability/concern</strong> ($\alpha = 0.84$, $p_{wco} = 0.63$, $\rho = 0.84$)</td>
<td></td>
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<tr>
<td>(Scale: 1 = strongly disagree, 5 = strongly agree)</td>
<td></td>
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</tr>
<tr>
<td>V11 The instructor is a friend.</td>
<td>0.83</td>
<td>32.10</td>
</tr>
<tr>
<td>V12 The instructor is pleasant.</td>
<td>0.83</td>
<td>32.10</td>
</tr>
<tr>
<td>V13 The instructor is approachable.</td>
<td>0.83</td>
<td>32.10</td>
</tr>
</tbody>
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(continued on next page)
Appendix A (continued)

<table>
<thead>
<tr>
<th>Appendix A (continued)</th>
<th>Standardized coefficients</th>
<th>t-values</th>
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</thead>
<tbody>
<tr>
<td>V11 I like the instructor as a person.</td>
<td>0.79</td>
<td>30.10</td>
</tr>
<tr>
<td>V12 The instructor seems to have an equal concern for all students.</td>
<td>0.76</td>
<td>28.64</td>
</tr>
<tr>
<td>V13 The instructor was actively helpful when students had difficulty.</td>
<td>0.83</td>
<td>32.62</td>
</tr>
</tbody>
</table>

Pedagogical affect (α = 0.90, ρvc(n) = 0.70, ρ = 0.90)

Overall, in this class the methods of instruction were...

V14 ineffective... 7 — effective | 0.76 | 28.78 |
V15 useless... 7 — useful | 0.84 | 33.36 |
V16 unsatisfactory... 7 — satisfactory | 0.90 | 37.47 |
V17 bad... 7 — good | 0.84 | 33.42 |

Adapted from Young et al. (2003)

Student interest (α = 0.76, ρvc(n) = 0.44, ρ = 0.76)

(Scale = 1 = strongly disagree/5 = strongly agree)

V18 You were interested in learning course material. | 0.63 | 20.94 |
V19 You were generally attentive in class. | 0.60 | 19.52 |
V20 You felt the course challenged you intellectually. | 0.63 | 20.94 |
V21 You have become more competent in this area. | 0.79 | 27.50 |

Adapted from Paswan and Young (2002)

Learning performance (α = 0.87, ρvc(n) = 0.58, ρ = 0.87)

(Scale = 1 = strongly disagree/5 = strongly agree)

V22 The knowledge you gained. | 0.82 | 31.92 |
V23 The skills you developed. | 0.84 | 33.03 |
V24 Your ability to apply the material. | 0.71 | 25.92 |
V25 Your desire to learn more about this subject. | 0.68 | 24.53 |
V26 Your understanding of this subject. | 0.72 | 26.46 |

Adapted from Young et al. (2003)

Perceived learning (α = 0.79, ρvc(n) = 0.64, ρ = 0.78)

(Scale = 1 = strongly disagree/5 = strongly agree)

V27 I am learning a lot in this class. | 0.81 | 29.94 |
V28 As a result of taking this course, I have more positive feelings toward this field of study. | 0.80 | 29.16 |

Source: Marks (2000)

α = internal reliability; ρvc(n) = variance extracted; ρ = composite reliability.

References

Cahn S. Faculty members should be evaluated by their peers, not by their students. Chron High Educ 1987;14:B2 (October).


