Choice is good, but relevance is excellent: Autonomy-enhancing and suppressing teacher behaviours predicting students' engagement in schoolwork

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Background and aims. This article examines two questions concerning teacher-behaviours that are characterised in Self-Determination Theory (Ryan & Deci, 2000) as autonomy-supportive or suppressive: (1) Can children differentiate among various types of autonomy-enhancing and suppressing teacher behaviours? (2) Which of those types of behaviour are particularly important in predicting feelings toward and engagement in schoolwork? It was hypothesised that teacher behaviours that help students to understand the relevance of schoolwork for their personal interests and goals are particularly important predictors of engagement in schoolwork.

Samples and methods. Israeli students in grades 3–5 ($N = 498$) and in grades 6–8 ($N = 364$) completed questionnaires assessing the variables of interest.

Results. Smallest Space Analyses indicated that both children and early adolescents can differentiate among three types of autonomy enhancing teacher behaviours – fostering relevance, allowing criticism, and providing choice – and three types of autonomy suppressing teacher behaviours – suppressing criticism, intruding, and forcing unmeaningful acts. Regression analyses supported the hypothesis concerning the importance of teacher behaviours that clarify the personal relevance of schoolwork. Among the autonomy-suppressing behaviours, 'Criticism-suppression' was the best predictor of feelings and engagement.

Conclusions. The findings underscore the active and empathic nature of teachers' role in supporting students' autonomy, and suggest that autonomy-support is important not only for early adolescents but also for children. Discussion of potential determinants of the relative importance of various autonomy-affecting teacher actions suggests that provision of choice should not always be viewed as a major indicator of autonomy support.

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Teachers' ability to support students' autonomy is viewed by many theorists as one of the hallmarks of good humanistic teaching (Ames, 1992; DeCharms, 1976; Deci, Ryan, & Williams, 1996; Maehr & Midgley, 1991; Nicholls & Nolen, 1995). When students feel that teachers support their autonomy they are likely to value the task and experience positive feelings toward it (Grolnick, Ryan, & Deci, 1991; Grolnick & Ryan, 1989). Consequently they are also more likely to show considerable behavioural and cognitive engagement (Connell 1990; Deci, Vallerand, Pelletier, & Ryan, 1991; Deci *et al.*, 1996; Grolnick, Deci, & Ryan, 1997; Ryan, 1993).

Self-determination theorists (Deci *et al.*, 1996; Grolnick *et al.*, 1997) assume that there are a number of educator-behaviours that affect students' feelings toward and engagement in learning. The theory groups those behaviours into three general clusters: autonomy-support, competence-support (structure) and relational-support (interpersonal involvement), according to the basic need they are assumed to support.

According to Self Determination Theory (SDT, Ryan & Deci 2000; Ryan, 1993), people experience a sense of autonomy when they can realise their personal goals, values and interests[1]. Grolnick *et al.* (1997) and Ryan, Sheldon, Kasser, & Deci (1996) state that the cluster of autonomy-supportive actions includes behaviours such as providing choice, encouraging self-initiation, minimising the use of controls, and acknowledging the other's perspective and feelings. Skinner and Belmont's (1993) list of autonomy-supportive behaviours includes one more component: clarifying the relevance of expected behaviours.

Behaviours that clarify the relevance of schoolwork for students involve educators' actions that help students to grasp the contribution of schoolwork to the realisation of their personal goals, interests, and values. Those relevance-clarifying actions are viewed as autonomy-supportive because, due to the understanding of the contribution of schoolwork to the attainment of personal goals, students feel more autonomous while studying. As an example, let us consider a child who is interested in computer graphics and strives to become an expert in that area, but does not enjoy mathematics. The child is likely to feel more autonomous as she learns certain mathematical functions after her teacher has explained that those functions would greatly enhance her capacity to create complex computer designs, and, more generally, to become an expert in that area.

During the last decade, the efforts of self-determination researchers focused on demonstrating the contributions of the general clusters of autonomy-support, relational-support and competence-support, and little attention was given to the study of the contributions of the specific components comprising each general cluster. However, now that the effects of the three general clusters have been documented (see Deci *et al.*, 1996; Grolnick *et al.*, 1997; Ryan & Deci, 2000), it is important to explore the specific components of each general cluster. Given the centrality of the dimension of autonomy-support in Self-Determination Theory (SDT), this article focuses on the relative importance of various types of autonomy-supportive teacher behaviours as predictors of feelings and engagement in schoolwork.

A second issue examined by the present study is the extent to which children can

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[1] *Self determination theorists (e.g., Ryan, 1993; Ryan & Deci, 2000) refer to goals, values and interests that are not only 'personal' but also 'authentic'. Based on their approach, it appears that goals can be considered authentic if they originate from one's inborn potentialities and dispositions, and are consistent with basic organismic needs such as the need for relatedness and the need for competence. The definition and identification of basic needs and authentic goals are complex theoretical and empirical issues that were discussed extensively by self-determination theorists (e.g., Ryan, 1993, 1995; Ryan et al., 1996; Ryan & Deci, 2000). Given the complexity of those issues, in the present research we adopted the less demanding concept of 'personal' goals and interests.*

distinguish among various types of autonomy-supportive teacher actions. Obviously, if children cannot distinguish among the various components of autonomy-support it would not be possible to rely on their reports to assess the relative importance of those components as determinants of engagement in schoolwork.

The relative importance of various types of autonomy-supportive behaviours was examined empirically in one laboratory study in which college students were asked to perform a boring task (Deci, Eghrari, Patrick, & Leone, 1994). The behaviours examined were providing rationale, acknowledging students' negative feelings, and a non-controlling presentation of the task. The results suggested that the presence of at least two behaviours had a significant positive effect on intrinsic motivation. However, no behaviour was found to be more important than the others in predicting intrinsic motivation. The results of that study suggest that the task of identifying uniquely important autonomy-supportive teacher behaviours might be rather difficult. Nevertheless, it is possible that in school contexts that are more consequential than the laboratory context, some autonomy-supportive teacher behaviours are influential even if they are not accompanied by other autonomy-supportive behaviours.

The present research was guided by the assumption that it would be possible to detect autonomy-supportive actions that have particularly strong effects if the investigation were based on two principles: (1) a clear distinction between autonomy-suppressive and autonomy-enhancing behaviours, and (2) the definition of the various autonomy-enhancing and suppressing teacher behaviours was based on the ways in which students construe the domains of autonomy support and suppression.

Based on descriptions of the experience of self-determination (e.g., DeCharms, 1968; Deci *et al.,* 1996), and accumulating evidence concerning the differences between positive and negative aspects of affect and motivation (e.g., Covington & Roberts, 1994; Diener & Emmons, 1985; Owens, 1994), our assumption was that it is important to distinguish between two types of autonomy-affecting actions: autonomy-enhancing and autonomy-suppressing.

An educator's action is experienced as highly autonomy-supportive if that action helps children to develop and realise their personal goals and interests, or to understand the contribution of the educator's or the child's present actions to the realisation of the child's personal goals and interests. In contrast, an educator's action is experienced as autonomy suppressing if it is perceived as interfering with the realisation of the child's personal goals and interests. The perception of an action as assisting in the formulation and realisation of personal goals and interests is likely to evoke positive feelings, whereas the perception of an action as interfering with the realisation of personal goals and interests is likely to evoke negative feelings.

Based on this view, it can be expected that, at the minimum, there would be two types of autonomy-affecting educators' behaviours that have differential consequences and are both important: autonomy-enhancing behaviours and autonomy-suppressing behaviours.

Accordingly, we expected that: (a) students would be able to differentiate clearly between autonomy-enhancing and autonomy-suppressing teachers' behaviours, and (b) each type of behaviour would have a unique contribution to feelings toward and engagement in learning.

Students' perceptions of autonomy-enhancing and suppressing teacher behaviours

Interviews with students and results of studies on the inter-generational transmission of

values (Assor, 1999; Assor & Raveh, 1993) suggested that students can distinguish among three autonomy-enhancing and three autonomy-suppressing types of teacher behaviours. In this section we describe those types of behaviour and explain the processes by which they are assumed to affect feelings and engagement in learning.

Autonomy-enhancing teacher behaviours

Fostering relevance. This category involves direct attempts by teachers to help students to experience the learning process as relevant to and supportive of their self-determined interests, goals and values. To facilitate such a positive perception of learning, teachers may explain the contribution of the learning task to students' personal goals and attempt to understand students' feelings and thoughts concerning the learning task. Although, theoretically, those types of activities can be treated as different types of behaviour, we have found that those behaviours tend to appear together, or, at least, are perceived by students as closely related (Assor & Raveh, 1993). Thus, teachers who were perceived as rather attentive to and considerate of students' feelings and thoughts were also described as trying to demonstrate the value of studying.

Providing choice. This teacher behaviour is likely to enable students to choose tasks that they perceive as consistent with their goals and interests. The opportunity to work on tasks that allow students to realise their goals or interests contributes to students' experience of autonomy in learning.

Allowing criticism and encouraging independent thinking. Teacher behaviours in this category are assumed to evoke feelings of interest because the expression of dissatisfaction by students might cause teachers to make learning tasks more interesting. In cases in which the teacher is not able to make the learning task more interesting, student criticism may still cause the teacher to provide a more convincing rationale for the learning task, thus helping the student to form a more positive evaluation of the learning task.

Autonomy-suppressing teacher behaviours

Suppressing criticism & independent opinions. This type of teacher action does not allow students to inform teachers about aspects of the task and the learning context that interfere with the realisation of their interests and goals, and therefore are rather frustrating. In addition, it is likely that the suppression of independent opinions directly undermines students' need for self-direction and self-expression, particularly in adolescence.

Intruding — Intervening in ongoing behavioural sequences (Disrupting natural rhythm). When teachers continually interfere with students' natural rhythm as they perform various tasks, students are likely to feel angry that they are not allowed to realise their action plans.

Forcing meaningless & uninteresting activities. This type of teacher behaviour can be assumed to be rather aversive because it involves an active attempt to compel students to do things that they find boring or meaningless. However, given that in many schools many academic activities are perceived as irrelevant or uninteresting by students, it is possible that the present category represents frequent occurrences that are not experienced as more problematic than other autonomy-suppressive types of action.

The relative importance of the various types of autonomy affecting teacher-behaviours as predictors of engagement in schoolwork

We hypothesised that, among the three autonomy-enhancing teacher-behaviours, 'fostering relevance' would be the most important predictor of engagement in schoolwork. The category of fostering relevance is likely to be particularly important in the case of academic school activities because it appears that in many schools many academic activities are not intrinsically motivated. For example, empirical examination of a large sample of Israeli children showed that less than 8% of the students described their engagement in academic activities as more intrinsically regulated than non-intrinsically regulated (Assor & Roth, 2000). Under those conditions, a major way to help students feel autonomous regarding schoolwork is to assist them to discover ways in which extrinsically motivated academic tasks can become relevant to their goals and interests.

The emphasis on relevance-fostering as an important autonomy-supportive behaviour is consistent with Ryan and Deci's (2000; Deci *et al.*, 1996) view concerning the contextual features that promote the experience of self-determination in school-work and other human activities. Thus, self-determination theorists do not necessarily assume that most school activities should or can be intrinsically motivated (see Deci *et al.*, 1996). Rather, they view many of those activities as having an extrinsic origin. However, they also assume that, under autonomy-supportive conditions, those activities can be internalised, and therefore can be experienced as fairly autonomous despite their initial extrinsic source.

To foster the relevance of schoolwork for children, teachers need to take an empathic-active role in relation to their students. This role requires the teacher first to understand students' goals, interests and needs, and then to link school tasks to those goals, interests and needs. The emphasis on an empathic-active approach that aims to enhance the relevance of schoolwork is consistent with Ryan's claim that adolescents' need for autonomy should not be identified with the need for independence, and certainly not detachment, from parents (Ryan, 1993; Ryan & Lynch, 1989).

We assumed that the importance of the category of choice-provision is likely to be limited when most choices involve tasks that are essentially not very interesting or relevant. Thus, teachers who provide ample choice among irrelevant tasks might not be experienced by students as highly autonomy-supportive. As in many public schools the structure and the resources of the school limit the extent to which students can be provided with tasks that are highly interesting or relevant, it is possible that choice-provision would not be found to be an important subdimension of autonomy-support at most schools.

With regard to behaviours that involve acceptance of criticism and encouragement of independent thinking, we assumed that this type of behaviour is not the most important because the expression of criticism in itself is not sufficient to make schoolwork more interesting and valuable. Based on the foregoing analysis, then, we expected that 'fostering relevance' would be the (autonomy-enhancing) behaviour that is most predictive of positive affect and engagement. As for the three autonomy-suppressive behaviours, there was no clear basis for predicting which behaviour would be found to be particularly important across *different* age groups. However, as we shall see in the next section, it is possible to make more specific age-related predictions when developmental processes are considered.

Age differences in the importance of autonomy affecting teacher behaviours

Taking a developmental perspective, one may claim that children in the ages of eight through ten years (i.e., middle and late childhood) have a much weaker need for autonomy than early adolescents (i.e., the ages of 11 to 13 years), and that they do not need so many autonomy-supports. Therefore, they may only strive to avoid coercive control and do not have a strong need for the positive components of autonomy support (e.g., fostering relevance, allowing criticism, etc.) Thus, some psycho-dynamic characterisations of the middle childhood period (i.e., the Latency period) seem to support the view of that children at this age are much more concerned with competence than with autonomy, and, in fact, do not have a strong need for autonomy-support (Blos, 1979; Erikson, 1963, 1964).

While researchers who do not identify themselves as psychoanalytic are less explicit on this issue, many of them still suggest that the striving for autonomy is stronger in adolescents than in children (Cobb, 1998; Feldman & Quartman, 1988; Hill & Holmbeck, 1986; Steinberg & Silverberg, 1986).

Contrary to the above assumptions and consistent with SDT (Ryan & Deci, 2000), we assumed that the need for autonomy support is strong also in childhood. Therefore, we expected that the behaviour of 'fostering relevance' – the one component of autonomy-support hypothesised to be the most important predictor of affect and engagement – would prove to be the strongest predictor also in the case of children in the ages of eight through ten years. In addition, we predicted that, as children enter the phase of early adolescence, the negative effects of teacher behaviours that involve suppression of critical and independent opinions might become more noticeable. Thus, following research on the importance of the process of finding and expressing one's authentic voice in early adolescence (Brown & Gilligan, 1992), we expected that the suppression of criticism might be particularly disturbing for early adolescents.

Hypotheses

We hypothesised that both children and early adolescents would be able to distinguish between two global types of autonomy-affecting teacher behaviours: autonomy-enhancement and autonomy-suppression. Furthermore, it was expected that within each global type of autonomy-affecting teacher behaviour children would be able to distinguish among three subtypes of behaviour. Overall, then, students were expected to differentiate among six subtypes of autonomy-affecting teacher behaviour.

'Fostering relevance' was expected to be the subtype of autonomy-enhancing behaviour that is the best predictor of positive affect and engagement for both early adolescents and children. 'Suppressing criticism' was expected to be the subtype of autonomy-suppressing behaviour that is the best predictor of negative affect and lack of engagement for early adolescents.

Method

The sample included 862 Israeli-Jewish elementary school students from grades 3–8 (i.e., the ages of eight to 14 years). The students were from three schools which, according to the classification of the Israeli ministry of education, serve populations that are mostly middle-class or lower middle-class. Two of the schools were in the beginning phase of a collaborative project with the authors and one school was recruited by means of personal acquaintance of one of the authors with the principal. It

is important to note that data analyses showed that the results did not differ as a function of school membership.

Students completed questionnaires that assessed their perceptions of their main teacher's behaviours, their feelings while studying the subjects taught by the main teacher, and perceived behavioural and cognitive engagement in subjects and classes taught by the main teacher. Students used a 4-point scale to respond to each item. The scale ranged from 'not true at all' to 'very true'.

The questionnaire also assessed several other variables pertaining to social and motivational processes in the classroom that are not related to the goals of the present article and were included to allow assessment of a project conducted in two of the schools. The teacher was not present in the classroom when the students completed the questionnaires, and students' identity was protected by an elaborate coding procedure.

Teachers' autonomy-affecting behaviours were assessed by 34 items, which had several sources. Most of the items assessing 'Provision of choice' and 'Fostering relevance' were taken from Rochester's Assessment Package for Schools (Connell, 1990; Wellborn & Connell, 1987). The items assessing 'Suppression of criticism' and 'Support of criticism' were taken from scales developed by Assor (1999). Most of the items assessing 'Intrusion' and 'Forcing of meaningless and uninteresting activities' were new items based on interviews with students, while several items were taken from Wellborn and Connell (1987). Examples of typical items and information on the subscales assessing the six types of autonomy-affecting teacher behaviours are provided in the Results section and in the Appendix.

Positive feelings regarding schoolwork (in the classes taught by the main teacher) were assessed by a scale that was comprised of three items pertaining to feelings of comfort, enjoyment and interest. The scale had a Cronbach alpha of 0.75. Negative feelings regarding schoolwork (in the classes taught by the main teacher) were assessed by a scale that was comprised of three items pertaining to feelings of stress, anger and boredom. The scale had a Cronbach alpha of 0.77.

Behavioural and cognitive engagement in schoolwork (in the classes taught by the main teacher) was assessed by a scale comprised of six items. The scale had a Cronbach alpha of 0.72. The items comprising the feelings and the engagement scales appear in the Appendix.

Results

The hypotheses pertaining to children's and early adolescents' capacity to differentiate among types of autonomy-affecting teacher behaviours were examined by means of two Smallest Space Analyses (SSA, Guttman, 1968; Shye, Elizur, & Hoffman, 1994) that were performed on items assessing students' perceptions of autonomy-affecting teacher behaviours. The SSA method represents the various items that assess teacher behaviour as points in a multidimensional space. The distances between the points reflect the empirical relations among the items, as measured by the linear correlations between them. The greater the conceptual similarity between two teacher behaviours, the more related they should be empirically and therefore the closer their locations in the multidimensional space.

The SSA method was preferred over a factor analytic method because the SSA is specifically designed to differentiate among multiple constructs that, theoretically, are expected to be highly related. Thus, unlike exploratory factor analysis, SSA does not

attempt to reduce the data into one global factor and several additional secondary factors. Rather, it allows one to distinguish among multiple constructs that might be of equal importance. Research using the SSA method has demonstrated its usefulness in cases where theory predicts the existence of multiple, highly related, constructs (see Schwartz, 1992; Shye *et al.*, 1994).
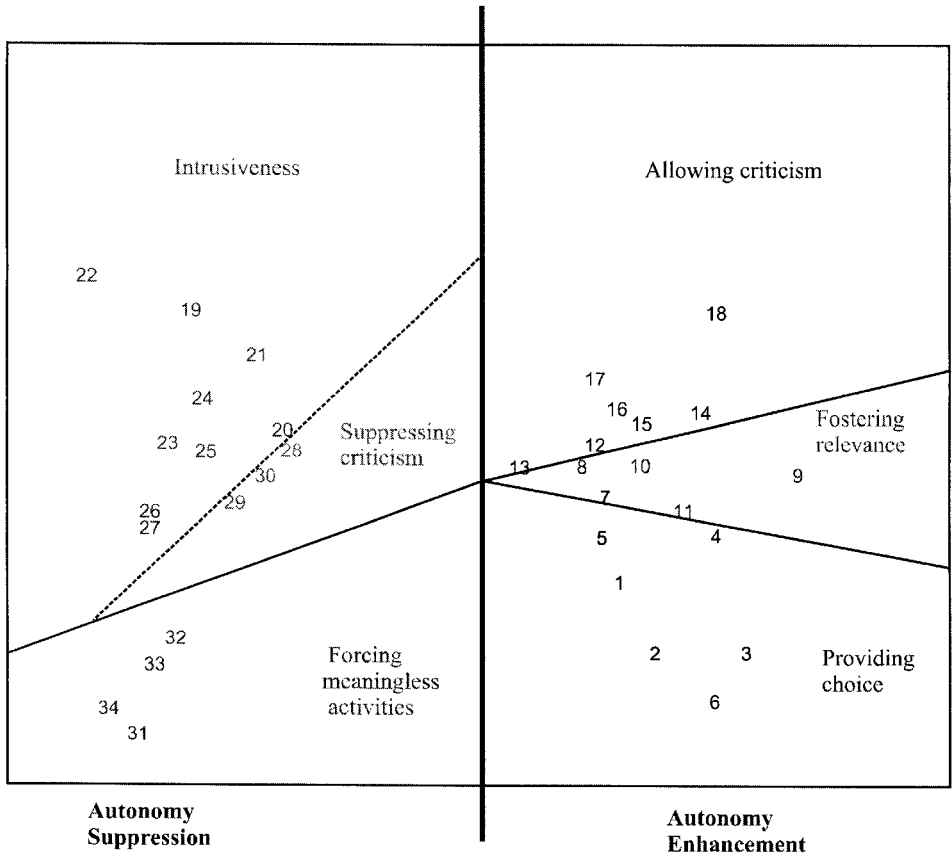
Providing choice: items 1, 2, 3, 4, 5, 6, 7
Fostering relevance: items 8, 9, 10, 11
Allowing criticism: items 12, 13, 14, 15, 16, 17, 18
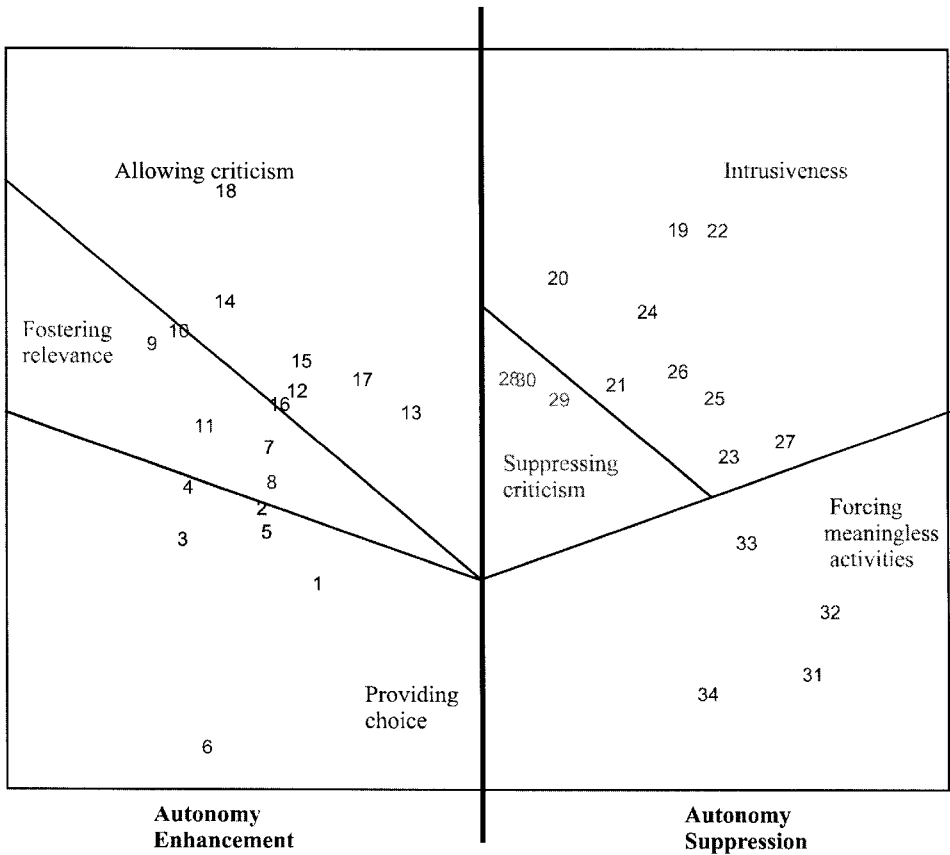Intrusiveness: items 19, 20, 21, 22, 23, 24, 25, 26, 27
Suppressing criticism: items 28, 29, 30
Forcing meaningless activities: items 31, 32, 33, 34

Figure 1. SSA of elementary school children's perceptions of autonomy-affecting teacher's behaviours – grades 3rd–5th.

Figure 1 presents the results of the SSA for grades third to fifth, and Figure 2 presents the results of the SSA for grades sixth to eighth. It will be recalled that students in both samples were elementary school students.

Inspection of the two figures indicates that, as expected, students in both age ranges

Providing choice: items 1, 2, 3, 4, 5, 6, 7
Fostering relevance: items 8, 9, 10, 11
Allowing criticism: items 12, 13, 14, 15, 16, 17, 18
Intrusiveness: items 19, 20, 21, 22, 23, 24, 25, 26, 27
Suppressing criticism: items 28, 29, 30
Forcing meaningless activities: items 31, 32, 33, 34

Figure 2. SSA of elementary school children's perceptions of autonomy-affecting teacher's behaviours – grades 6th–8th.

strongly differentiated among autonomy-suppressing and autonomy-enhancing teacher behaviours. As can be expected in a case of a strong differentiation, the autonomy suppressing items and the autonomy enhancing items appear in different areas of the two-dimensional space.

The SSAs suggest that both children and early adolescents differentiate among the items belonging to the three subdimensions of autonomy-enhancement and the three subdimensions of autonomy-suppression. This conclusion is supported by satisfactory alienation coefficients of .15 for the analysis performed on grades 3–5, and .16 for the analysis involving grades 6–8. Thus, each set of theoretically distinct items could be separated from other items by straight lines. The non-arbitrary nature of those lines is

supported by their theoretical origin and their replication in two samples. Specifically, only one item out of 18 items fell in an unexpected, yet neighbouring location. This was item 7: 'The teacher encourages me to work in my own way'. This item was expected to belong to the subdimension of 'Providing choice', but it actually fell within the region of 'Fostering relevance'.

The SSAs suggest that both children and early adolescents perceive the behavioural subdomains of 'Providing choice', 'Allowing criticism' and 'Forcing meaningless activities' as rather distinct conceptual structures. Items representing the subdomain of 'Fostering relevance' were found to be close to the subdomains of 'Providing choice' and 'Allowing criticism'. This finding is consistent with the hypothesis that 'Fostering relevance' is a particularly important and central type of autonomy-enhancing behaviour. Because of its importance, 'Fostering relevance' can be expected to fall at the centre of the 'Autonomy enhancement' region, and therefore to be close to the two other types of autonomy enhancing behaviours. Results also showed that 'Suppressing criticism' was close to and perhaps not very distinct from 'Intrusiveness'.

Overall, the SSA analyses supported the hypothesis that both children and early adolescents are able to distinguish among six different subdimensions of autonomy-affecting teachers' behaviours.

To examine the relative importance of the various autonomy-affecting teacher behaviours, we constructed a scale for each of the six subtypes identified by the SSAs. Following are representative items, as well as information on coefficients of internal consistency (Cronbach alphas). The complete scales appear in the Appendix.

Providing choice: Teacher allows me to choose how to do my work in the classroom (6 items, alpha = .75).

Allowing criticism and encouraging independent thinking: T allows us to talk about things that we find unacceptable in school (6 items, alpha = .76).

Fostering understanding and interest: T explains why it is important to study certain subjects in school (6 items, alpha .81).

Suppressing criticism & independent opinions: T is not willing to acknowledge her mistakes (3 items, alpha .72).

Forcing meaningless and uninteresting activities: T forces me to prepare uninteresting homework (4 items, alpha .58).

Intruding: T interrupts me in the middle of activities which interest me (6 items, alpha .73).

The correlations among the six subscales are presented in Table 1.

As can be expected, the three autonomy enhancement scales correlated negatively with the three autonomy suppression scales in both age groups. The correlations among the three autonomy-suppression scales were moderate to high whereas the correlations among the three autonomy-enhancing scales are high. Given the strong results of the SSA, it appears that the high correlations among the autonomy-enhancement scales and among two of the autonomy-suppression scales should not be interpreted as indicating that children do not differentiate among the various types of autonomy-supportive teacher behaviours. Rather, they perceive them as interrelated, perhaps even more interrelated than they actually are. It should be noted that a similar pattern of high correlations appears whenever one tries to distinguish among constructs that, theoretically, are expected to be both distinct and strongly related (see, for example, Ryan & Connell, 1989).

The relative importance of the six subtypes of autonomy-affecting behaviour as predictors of affect and engagement in schoolwork was examined by means of

Table 1. Correlations among six subtypes of autonomy-affecting perceived teacher behaviours

	Autonomy enhancement			Autonomy suppression	
	2	3	4	5	6
Grades 3rd to 5th					
Autonomy-enhancement					
1. Providing choice	.56	.61	−.14	−.13	−.09
2. Fostering understanding & interest		.65	−.29	−.10	−.19
3. Allowing criticism			−.27	−.14	−.21
Autonomy suppression					
4. Suppressing criticism				.35	.61
5. Forcing meaningless activities					.31
6. Intruding					
Grades 6th to 8th					
Autonomy-enhancement					
1. Providing choice	.65	.71	−.44	−.25	−.31
2. Fostering understanding & interest		.74	−.59	−.18	−.49
3. Allowing criticism			−.53	−.23	−.38
Autonomy suppression					
4. Suppressing criticism				.31	.64
5. Forcing meaningless activities					.33
6. Intruding					

Note: Correlations below .10 are not significant. Correlations above .15 or below −.15 are significant at the $p < .01$ level.

regression analyses. The analyses were conducted separately for students in grades 3 through 5, and students in grades 6 through 8. Because preliminary analyses showed that the subdimension of 'Forcing meaningless activities' did not have unique contributions at any age, this construct was not included in the regression analyses. For each age group, three regression analyses were conducted. The independent variables were the various subtypes of autonomy-affecting teacher behaviour. The dependent variables were positive feelings toward studying, negative feelings toward studying, and engagement in studying. Table 2 presents the results of the regression analyses.

Inspection of Table 2 shows that, as expected, teacher behaviours aimed at fostering relevance had unique positive associations with both positive feelings and behavioural and cognitive engagement in studying, for both age groups. Furthermore, this subtype of behaviour was the only autonomy-supportive behaviour that was significantly related to both feelings and engagement. Also as expected, 'Suppressing criticism' had unique associations with both negative feelings and engagement. In addition, 'Suppressing criticism' was the only autonomy-suppressing behaviour that was related to both feelings and engagement among early adolescents. Somewhat surprisingly, 'Suppressing criticism' was found to be the only autonomy-suppressing behaviour that predicted engagement also among children.

Interestingly, the behaviours of 'Providing choice' and 'Intruding' did show the expected unique associations with feelings, but not with behavioural and cognitive engagement. It should be noted that zero-order correlations and hierarchical regression

Table 2. The effects of autonomy-suppressing and enhancing teacher behaviours on students' feelings and engagement in learning – A regression analysis

Subtypes of teacher behaviour	Positive feelings	Negative feelings	Behavioural & cognitive engagement
Grades 3rd to 5th			
Autonomy-suppression			
1. Intruding	−.13***	−.12**	−.04
2. Suppressing criticism	−.13***	−.10*	−.20***
Autonomy enhancement			
3. Fostering relevance	.39***	−.17**	.25***
4. Allowing criticism	−.09+	.00	.02
5. Providing choice	.19***	.05	−.03
R^2	.50	.41	.15
Grades 6th to 8th			
Autonomy-suppression			
1. Intruding	.04	.38***	−.10
2. Suppression of criticism	−.22***	.24***	−.15*
Autonomy enhancement			
3. Fostering relevance	.32***	−.12	.24*
4. Allowing criticism	−.02	−.02	−.01
5. Providing choice	.27***	.01	.06
R^2	.51	.41	.19

Note: The coefficients in the table are all standardised beta weights. All the predictors are entered simultaneously.
$+p < .10$ $*p < 0.5$ $**p < .01$ $***p < .001$

procedures produced results that were very similar to those of the simultaneous regression procedure.

Discussion

Overall, the results of this study show that children and early adolescents can differentiate among six types of autonomy-affecting teacher behaviours. Thus, it appears that children do not simply classify teachers as good or bad, and they do seem to perceive the different ways by which their teachers support or suppress their need for autonomy in schoolwork. Moreover, the findings suggest that there are two autonomy-affecting teacher behaviours that are particularly important in terms of their effects on feelings toward learning and cognitive and behavioural engagement in learning. These types of behaviour are 'fostering relevance' and 'suppressing criticism'.

The findings concerning the importance of relevance-fostering behaviours might help to clarify the concept of autonomy-support by teachers. Based on SDT (Ryan & Deci, 2000; Ryan, 1993) and on J. S. Mill (1947, and see also Aviram, 1986), we view the need for autonomy as pertaining, primarily, to the striving to develop and realise personal goals, values and interests[2]. In our view of the need for autonomy, the role of

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[2] *Obviously, there are many other definitions of the need for autonomy (e.g., Murray, 1938) and the concept of autonomy (e.g., Aviram, 1986). However, a definition that focuses on the realisation of personal interests, values and goals appears most consistent with the humanistic framework within which our research is anchored.*

freedom of action is less important than the extent to which one's actions reflect one's personal goals, interests or values. Freedom of action is, of course, desirable, because it often increases the likelihood that people will be able to realise their personal goals and interests in their actions, but it is not the primary component of the need for autonomy.

The teacher who provides choice, avoids intrusion or tolerates criticism may intend to create a space that allows students to realise their personal goals and interests. However, it appears that many students do not feel that this open space contributes to their autonomy because they do not see any connection between any kind of schoolwork and their personal goals and interests. It is also possible that some of them have not developed serious personal goals or interests and therefore they do not know what to do with this open space. In other words, being able to choose one's schoolwork may not be so important to students because none of the choices seems related to their personal goals or interests, or because they do not have clear goals or interests.

Under those conditions, the primary task of the teacher is to try to understand their students' authentic interests and goals, and then help students to understand the connection between their personal goals and interests and schoolwork. In addition, teachers may also find or develop tasks that fit their students' interests. When students do not have clear personal interests and goals, teachers may assist them in developing such interests and goals.

It is interesting to note that the endorsement of what may be termed an 'empathic-active approach to autonomy-support' is also consistent with Grolnick, Kurowski, & Gurland's (1999) recent emphasis on the role of parental involvement in promoting children's engagement in learning.

One, widely held, view of autonomy-support suggests that this process, essentially, involves minimisation of guidance and consultation by educators, so as to leave sufficient space for the emergence of the child's true self (see Neill, 1960; and discussions of this issue by Barth, 1972; Dennison, 1969; Graubard, 1972). The results of the present study, together with writings by many educational and self-determination theorists (e.g., Battistich, Solomon, Watson, & Schaps, 1997; Deci *et al.*, 1996; Graubard, 1972 ; Holt, 1970)) may help to correct this somewhat simplistic view by emphasising the active-empathic nature of the process of autonomy-support. According to the active-empathic view, in many cases, *the essence of autonomy enhancement is not minimisation of the educator's presence, but making the educator's presence useful for the student who strives to formulate and realise personal goals and interests.*

The fact that 'fostering relevance' was found to be a more important component of autonomy support than 'choice provision' might help to counter some recent theoretical arguments and findings that question the importance of autonomy -support. Recently, Iyengar and Lepper (1999) have demonstrated that denial of choice by a member of one's in-group does not undermine intrinsic motivation and performance of Chinese-American children. Schraw, Flowerday, and Reistter (1998) have found that choice provision enhanced positive affective perceptions of a reading task, but did not contribute to cognitive engagement in that task.

One possible interpretation of those negative results is that autonomy-support is not so important for children, or as Iyengar and Lepper (1999) suggest – it is not important for children in Collectivist cultures. However, the findings of the present study suggest another interesting interpretation. Perhaps the studies cited above did not focus on the most important indicators of autonomy support. Thus, it is possible that, in the situations examined in those studies, as in our study, choice provision was not a very

good indicator of autonomy-support.

More generally, it appears that there is no one type of autonomy-affecting behaviour that is always the best means for supporting students' autonomy. Therefore, before we examine the effects of autonomy-support in a certain situation, it is important to specify the type of autonomy-support that, theoretically, is expected to be most important in that situation. Unless we make such a priori theoretical specification there is always a possibility that the type of autonomy-support we have focused on is not the important one for the relevant context.

The findings suggest that teacher actions that involve forcing of meaningless and uninteresting activities do not have a serious negative impact on affect and engagement concerning learning. This unexpected result might be explained by the fact that the schools studied had a generally warm and caring climate and teachers did not force students to get involved in tasks that are very boring and meaningless for them.

From a developmental point of view, the most salient characteristic of the results is the general similarity across age groups. The findings are clearly inconsistent with the notion that children in elementary school do not need autonomy-support, and merely strive to avoid excessive coercion and autonomy-suppression. Thus, Table 2 shows that the positive effects of autonomy-supportive teacher behaviours were similar for children and early adolescents. The fact that 'criticism suppression' was found to be the most important autonomy-suppressing type of action also for children might suggest that the opportunity to voice one's criticism is a fundamental aspect of the need for autonomy that both children and adolescents are not willing to give up easily.

Surprisingly, teacher behaviours that allow criticism and encourage independent thinking were not found to have a unique contribution to the prediction of feelings or engagement in schoolwork for early adolescents. One possible explanation for that finding is that the expression of critical opinions regarding academic schoolwork is not important for early adolescents because it is not perceived as related to various personal, sexual, ideological and vocational issues that concern them. Another possible reason is the understanding that the voicing of one's critical opinions would not lead to significant changes in the structure and content of learning.

The results appear to have some valuable practical implications for teachers. The findings point to two types of behaviours that teachers might need to pay special attention to if they want to encourage positive feelings and engagement in learning among their students. The first type of behaviour is fostering relevance, and the second type is suppressing criticism. While teachers might want to engage in the first type of behaviour frequently, they need to minimise the occurrence of the second type.

It is important to note, however, that the greater importance of relevance fostering relative to the other autonomy-enhancing behaviours is likely to depend on the nature of the school. Thus, it is possible that in schools in which there is a very wide range of choice options, provision of choice might be as important as relevance-fostering. Similarly, in schools in which students have considerable influence on the curriculum and the structure of the school, teacher actions that allow criticism and foster independent thinking might be as important as relevance-fostering.

Another important practical implication of the present study pertains to children's ability to differentiate among six types of autonomy affecting teacher behaviours. Because children's reports appear to be sufficiently differentiated, it appears that teachers can use questionnaires similar to the one used in this study to obtain feedback from their students concerning specific ways by which they may enhance or frustrate students' need for autonomy. Based on the results of those questionnaires, teachers can

then attempt to modify their ways of teaching and interacting with students. In our own school reform work (Assor, Alfi, Kaplan, Katz, & Roth 2000), we have used such a feedback procedure as part of a fairly successful school reform that was aimed at enhancing the extent of autonomy support at school.

The present study has demonstrated an association between students' perceptions of teachers' autonomy-affecting behaviours and students' perceived academic engagement. Future research may examine the processes mediating the effects of autonomy-affecting teachers' behaviours on students' engagement.

Overall, the present study indicates that children and adolescents can differentiate among six types of autonomy-affecting teacher behaviours. The findings suggest that the need for various types of autonomy-support exists also in young elementary school children and is not unique to adolescents. The results underscore the importance of fostering relevance and suppression of criticism as important elements of autonomy-enhancement and suppression in school. These findings suggest that the provision of choice cannot always be viewed as the major indicator (and means) of autonomy support. It is argued that the relative importance of various components of autonomy-support and suppression varies as a function of the educational contexts and relationships within which students function.

Acknowledgement

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Appendix: The scales used in the study (translated from Hebrew)
Scales measuring autonomy-affecting teacher behaviours:

A. Providing choice:
1. When I am doing something that interests me – T gives me enough time to finish it.
2. T allows me to choose how to do my work in the classroom.
3. T asks us which topics we would like to study more and which we prefer to study less.
4. T asks us if there are things we would like to change in the way we study.
5. T allows me to choose to study topics that interest me.
6. When T gives us an assignment she allows us to choose which questions to answer.
7. T encourages me to work in my own way.

B. Fostering understanding and interest:
8. T talks about the connection between what we study in school and what happens in real life.
9. It is important for T that I would learn things that interest me.
10. T explains why it is important to study certain subjects in school.
11. T talks to us about how we feel concerning the subjects we study.

C *Allowing criticism and encouraging independent thinking*:

12. T listens to my opinions and ideas.
13. T tells us that if we do not agree with her – it is important that we would express our disagreement.
14. T is willing to listen to students' complaints regarding her.
15. T respects students who tell her what they really think and are not ingratiating.
16. T allows me to decide about things by myself.
17. T allows us to talk about things that we find unacceptable in school.
18. T shows me how to solve my problems by myself.

D. *Intruding*:

19. T tells me what to do all the time.
20. T does not allow me to work in my own pace.
21. T interrupts me in the middle of activities that interest me.
22. T is strict about me doing everything in her way.
23. T stops me in the middle when I write or read interesting things.
24. T stops me in the middle before I finish to say what I wanted.
25. Sometimes I want to work on one topic, and T forces me to move to another topic.
26. Sometimes I want to move to a new topic and T forces me to keep dealing with the 'old' topic.
27. When I choose a topic for a paper, T tries to influence my choice too much.

E. *Suppressing criticism & independent opinions*:

28. T is not willing to acknowledge her mistakes.
29. T acts in a vindictive way toward students who oppose her opinions.
30. T is willing to listen only to opinions that fit her opinion.

F. *Forcing meaningless and uninteresting activities*:

31. T forces me to prepare uninteresting homework.
32. T forces me to read boring things (books, stories or instructions).
33. T forces me to participate in aggravating discussions.
34. T forces me to complete work sheets that do not help me to understand the material we study.

Positive feelings regarding schoolwork:

1. When studying the subjects taught by the teacher I feel at ease
2. I enjoy studying in classes taught by the teacher.
3. The material studied in the classes with the teacher interests me.

Negative feelings regarding schoolwork:

1. When studying the subjects taught by the teacher I feel stressed.
2. I feel angry during classes with the teacher.
3. In classes taught by the teacher I feel bored.

Behavioural and cognitive engagement in schoolwork:

1. I do more than what I am required when I study the subjects taught by T.
2. I pay attention and attempt to follow the lesson in classes taught by T.
3. I come to T's class unprepared (without homework, without reading, etc.) – Reversed.
4. I participate in conversations and discussions that take place in T's class.
5. In classes with T, I try to look busy, but I really do not pay attention – Reversed.
6. I try to understand the material studied in T's class.