CHAPTER 2

LEADERSHIP AND TEAM DIVERSITY: CAN HIGH-HIGH LEADERS HELP LEVERAGE THE POTENTIAL OF EDUCATION LEVEL DIVERSITY?\(^4\)

\(^4\) I am particularly thankful to Eric Kearney and Sven C. Voelpel for co-authoring this manuscript.
ABSTRACT

There are currently only a handful of studies that examine the complex issue of how leadership influences the link between team diversity and team performance. To advance this literature, we used a sample of 156 customer service and sales teams to investigate the interactive effects of educational level diversity and participative and directive leadership on team performance. Drawing on the multiplicative version of the “High-High leader” concept (Blake & Mouton, 1964), we applied this classic leadership theory to a specific context. As hypothesized, our results confirmed that the association between educational level diversity and team performance was most strongly positive when levels of both participative and directive leadership were high as opposed to one being high and the other low or both being low. We discuss the implications of these findings for the respective literatures on team diversity and team leadership as well as the nascent literature that integrates these two phenomena.

KEYWORDS:

Team diversity
Participative leadership
Directive leadership
Team performance
CHAPTER 2

INTRODUCTION

Organizations increasingly rely on interactive teams – as opposed to individuals working by themselves – to build and retain their competitiveness in a complex business environment (Kozlowski & Ilgen, 2006; Mathieu, Maynard, Rapp, & Gilson, 2008). Due to both demographic developments and the hope that a broader range of skills, knowledge, and perspectives will benefit performance, organizational teams are, on average, becoming more diverse (Jackson & Joshi, 2011). But meta-analyses show that, despite the theoretical potential of diversity to enhance performance, the relationship of both job-related (e.g., functional) diversity and demographic (e.g., age or gender) diversity with team performance is usually weak and often near zero (e.g., van Dijk, van Engen, & van Knippenberg, 2012). Apparently, diversity has beneficial effects in teams only under certain conditions. Many scholars have therefore sought to identify moderators of the diversity-team outcomes relationship (Harrison, Price, Gavin, & Florey, 2002; Jehn et al., 1999; Kearney, Gebert, & Voelpel, 2009).

Surprisingly, the role of leadership has not figured prominently in this search. In 1996 (p. 163), DiTomaso and Hooijberg noted, “One would think that in the field of management the study of diversity would be all about leadership, but this is not what has developed.” Despite calls for examining the role of leadership in promoting diverse teams’ performance (e.g., Van Knippenberg et al., 2004), this observation by and large still holds true today (Klein et al., 2011). Although there have been a handful of studies that have investigated interactive effects of team diversity and leadership (e.g., Kearney & Gebert, 2009; Klein et al., 2011; Mohammed & Nadkarni, 2011; Nishii & Mayer, 2009; Shin & Zhou, 2007; Somech, 2006), this literature is still fragmentary. With respect to interactions between diversity and leadership, many important types of diversity, many important leadership styles, and many important contexts have not yet been studied. This constitutes a lamentable gap in the literature given that there are differential effects of different attributes of diversity (Jackson & Joshi, 2011; Jehn et al., 1999) and of different leadership styles (Burke et al., 2006) on team outcomes. Moreover, the diversity-team outcomes relationship may differ across contexts, depending upon, for instance, the industrial sector one examines (Joshi & Roh, 2009) and the types of tasks that teams are charged with (Mannix & Neale, 2005).

In this study, we therefore extend the scope of the literature on the interactive effects of diversity and leadership by studying previously unexamined, but theoretically and practically relevant variables with respect to diversity (educational level heterogeneity), leadership (task-oriented [directive] and person-oriented [participative]), and context (customer service and sales
We define educational level diversity as the differences that exist among the members of a team with respect to the highest educational degree they have obtained. Participative leadership denotes the extent to which a leader encourages exchanges about ideas and involvement in decision-making (Yukl, 2010). Directive leadership pertains to the degree to which a leader provides clear directions and expectations and demands compliance with instructions (House, 1971; Lorinkova, Pearsall, & Sims, 2012). Drawing on the multiplicative version of the “High-High leader” concept proposed by Blake and Mouton (1964; 1982), we argue that participative and directive leadership behaviors augment each other and interact with educational level diversity such that this type of team heterogeneity is most strongly positively related to team performance when levels of both participative and directive leadership are high.

**THE RELATIONSHIP BETWEEN EDUCATIONAL LEVEL DIVERSITY AND TEAM PERFORMANCE**

Diversity entails benefits and drawbacks that often offset each other (Van Knippenberg & Schippers, 2007). Unlike ethnicity, gender, age, functional background and tenure, educational level is among the less frequently studied diversity types (Jackson & Joshi, 2011). In customer service and sales teams, however, it seems sensible to assume that it, like other diversity types, can both foster and impede team performance. On the one hand, educationally diverse teams should be better able to deal with different kinds of customers who also vary on educational level. Educational level is likely to influence the type of “thought world” a person inhabits (Dougherty, 1992) – that is, the interpretive schemata a person uses to develop a cognitive orientation toward problems and tasks – as well as the communication style (e.g., vocabulary, sentence structure) that a person habitually uses. Highly educated customer service and sales people might be less able to establish rapport with less educated customers, whereas less educated customer service and sales persons might have more difficulty connecting with highly educated customers. Educationally diverse teams not only have the advantage of being able to better match service and sales persons with customers in difficult interactions or challenging situations, but also offer team members the opportunity to learn from other team members how to deal with customers who are different from themselves regarding educational level.

At the same time, however, continued interactions with educationally dissimilar team members may lead persons to realize how different they really are with regard to deep-level attributes such as interests, attitudes, and values, all of which may be related to educational level. Prior research (Harrison et al., 1998; Harrison et al., 2002) has shown that over time, it is particularly these deep-level diversity attributes (rather than “surface-level” variables such as
age, gender, or race) that affect team dynamics. Given that educational level diversity is likely to be associated with many of these deep-level differences, van Dijk et al. (2012) recently argued that this type of heterogeneity falls somewhere between demographic and deep-level diversity.

Hence, educational level diversity, like other types of heterogeneity, is a “double-edged sword” in that its positive and negative effects might neutralize each other (Jackson & Joshi, 2011; van Knippenberg & Schippers, 2007), thus yielding correlations close to zero between educational level diversity and team performance. Recent meta-analytic findings confirm this view (van Dijk et al., 2012). At the same time, the variance of these findings in both the positive and the negative direction underscores the need to examine moderator variables, with leadership being a seemingly obvious, but still understudied choice in this regard (Nishii & Mayer, 2009).

Prior studies have established that, for example, transformational leadership positively moderates the relationship between job-related and demographic diversity on the one hand and team performance on the other (Kearney & Gebert, 2009; Shin & Zhou, 2007). In a related vein, Nishii and Mayer (2009) have shown that demographic diversity is less strongly related to group turnover when leaders establish positive relationships with all followers of a group (high LMX mean), without showing preferential treatment to some individuals (low LMX differentiation). Moreover, Klein et al. (2011) found that task-focused leadership attenuated the relationship between value diversity and team conflict and, ultimately, team performance, whereas person-focused leadership exacerbated this relationship.

Our study builds on, but also goes beyond this previous work in important ways. First, we study a different diversity type in a different context. We argue that educational level diversity entails a potential for improved team performance in customer service and sales settings in which team members need to communicate with and adapt to different customers from all walks of life. This potential for superior performance on the basis of educational level diversity may be less enhanced in teams that perform tasks with highly complex cognitive demands (e.g., R&D teams), and that may therefore benefit more from similarly high levels of education of the various members. Second, as Harrison and Klein (2007) noted, diversity can mean different things. For example, it can signify separation – that is, differences in positions or opinions. The main objective in managing teams that are heterogeneous with respect to values, for example, may be to prevent negative effects, given that differences in values may entail little potential for enhanced team performance. Consequently, this is what Klein et al. (2011) focused on by examining how leadership can help prevent high levels of team conflict in teams that are diverse regarding values. By contrast, we conceptualize educational level diversity in customer service and sales teams as variety (Harrison & Klein, 2007) – that is, as differences in
backgrounds and experiences that constitute a potential for successful task accomplishment. Third, previous studies of leadership in diverse teams have focused on the effects of specific leadership styles and behaviors, but have not addressed the question of how different leadership aspects may jointly affect the diversity-team performance relationship. But as we will argue below, the effect of participative leadership on the link between diversity and team outcomes is bound to depend on the degree to which a leader simultaneously enacts directive leadership. Analogously, the effects of directive leadership on team performance are likely to depend on how these leadership behaviors are combined with participative leadership.

THE "HIGH-HIGH" HYPOTHESIS: JOINT EFFECTS OF PARTICIPATIVE AND DIRECTIVE LEADERSHIP ON THE DIVERSITY-PERFORMANCE LINK

Among the multiple taxonomies of leader behaviors, many distinguish between person-focused and task-focused leadership, with participative and directive behaviors being aspects of the former and the latter, respectively (e.g., Burke et al., 2006). However, the literature on person-focused and task-focused leadership has yielded mixed and inconclusive findings (Yukl, 2010), which has given rise to increasingly complex contingency theories (e.g., Hersey & Blanchard, 1984; Vroom & Jago, 1988), most of which have likewise found relatively little empirical support (Van Knippenberg, 2012). Accordingly, the preponderance of the leadership literature has moved on to address newer concepts such as transformational or visionary leadership (e.g., Grant, 2012), authentic leadership (e.g., Luthans & Avolio, 2003), or empowering leadership (e.g., Chen, Sharma, Edinger, Shapiro, & Farh, 2011). Nevertheless, Judge, Piccolo, and Ilies (2004) made a convincing case that it would be ill advised for researchers to consider classic leadership concepts as obsolete. In line with this reasoning, we argue that in the ongoing effort to understand the effects of leadership in diverse teams, the concept of the “High-High leader” (Blake & Mouton, 1964) merits another look.

Within their Managerial Grid, Blake and Mouton (1964) argued that high levels of both person-oriented (e.g., participative) and task-oriented (e.g., directive) leadership should engender the most beneficial effects on follower performance. For at least three reasons, we believe that the unfavorable verdict (e.g., Larson, Hunt, & Osborn, 1976) on the “High-High leader” concept may be premature. First, many of the studies based on the “High-High leader” idea were based on an “additive” model within which person-oriented and task-oriented behaviors are assumed to be independent (Yukl, 2006). Only few studies have actually been based on a “multiplicative” model that posits beneficial effects of simultaneously enacting high levels of these two
leadership behaviors that may mutually augment each other. Of the few studies that have tested interactive effects, many have drawn highly questionable conclusions – for example, the claim that increases of explained variance in the order of 2 to 8 percent do not justify the greater complexity that a multiplicative model entails (Larson et al., 1976). Second, the “High-High leader” model has been tested primarily at the individual level of analysis (e.g., Nystrom, 1978). But increasingly, leaders need to lead teams rather than just individuals ((Hackman & Wageman, 2005). Findings at one level of analysis cannot necessarily be assumed to be equally applicable to other levels of analysis (Kozlowski & Klein, 2000). Third, Blake and Mouton (1964; 1982) did not develop hypotheses that take into account the respective context, and most empirical studies that have tested interactive effects were based on the probably untenable assumption of a universal generalizability of the “High-High leader” concept.

We argue that in the specific context of customer service and sales teams, participative and directive leadership interact in a mutually facilitative way and together have a more beneficial effect with respect to leveraging the potential of educationally diverse teams than either of these leadership behaviors has on its own. Participative leadership is likely to have both beneficial and detrimental effects on the performance of educationally diverse teams. If leaders encourage participation, team members are likely to feel more empowered (Seibert, Wang, & Courtright, 2011), which in turn promotes intrinsic motivation (Zhang & Bartol, 2010), knowledge sharing (Srivastava, Bartol, & Locke, 2006), and team learning (Lorinkova et al., 2012). At the same time, however, participative leadership may also increase dysfunctional conflict, given that exchanges among individuals who are educationally diverse may make salient differences in interests, attitudes, and values (Klein et al., 2011). Hence, in and of itself, participative leadership is unlikely to tip the scale of the positive and the negative effects of diversity in favor of the former.

A similar case can be made for directive leadership, which likewise entails benefits and drawbacks in educationally diverse teams. On the one hand, directive leadership can provide a sense of direction and ensure that roles and responsibilities are clear to all team members, thus enhancing the alignment of efforts (Somech, 2006). Nevertheless, directive leadership, which emphasizes compliance rather than autonomy (Lorinkova et al., 2012), may also prevent team members from sharing their unique perspectives and synergistically combining their diverse ideas. Hence, it may militate against reaping benefits from the broader range of backgrounds that heterogeneity entails. Therefore, in and of itself, directive leadership is also unlikely to promote a preponderance of the positive over the negative effects of educational level diversity.
It thus appears that for each of these leadership behaviors to engender beneficial effects on the performance of educationally diverse teams, measures are needed that help to bring to fruition the positive effects of each type of leadership behavior by curtailing its negative effects. We argue that directive leadership helps attenuate dysfunctional conflicts and the lack of alignment that may ensue if only participative leadership is enacted in educationally diverse teams. Analogously, we propose that participative leadership can prevent the failure to explore different ideas and unique knowledge that may result if a team leader exhibits only directive behaviors. Hence, we posit a three-way interaction that assumes that participative and directive leadership mutually augment each other and together help to leverage the potential of educationally diverse teams.

In teams that are homogeneous regarding educational level diversity, this combination of leadership behaviors may have less beneficial effects. In comparison to heterogeneity, homogeneity entails a more restricted range of backgrounds and perspectives and thus constitutes less of a performance potential. Consequently, the potential benefits of participative leadership (e.g., exploring different options) may be more limited in homogeneous teams, especially when tasks are not highly cognitively complex. Moreover, in homogeneous teams there may be fewer differences among the team members concerning deep-level variables such as attitudes and values. The potential for dysfunctional conflict may thus be lower in such teams (Klein et al., 2011), especially over time (Harrison et al., 2002). Hence, there may be less of a need for the positive effects of directive leadership (e.g., ensuring alignment) in homogeneous teams, given that the members in such teams are more likely to agree about how best to attain objectives. In sum, we therefore posit:

_Hypothesis: There is a three-way interactive effect of educational level diversity, participative leadership, and directive leadership on team performance such that the relationship between educational level diversity and team performance is most strongly positive when levels of both participative and directive leadership are high rather than either one or both being low._
METHODS

SAMPLE AND PROCEDURE

Our sample consisted of 1233 individuals clustered in 156 teams of a customer service and sales company in Germany. These 156 teams were led by 126 team leaders, with 107 leaders (i.e., 84.9%) being responsible for only one team, ten leaders (7.9%) supervising two teams each, seven leaders (5.6%) being in charge of three teams each, and two leaders (1.6%) being responsible for four teams each. Team members interacted frequently and, for the most part, worked interdependently on joint projects toward common team goals (e.g., developing product sales pitches, addressing customer complaints). Three sources provided data for our analyses: Team members assessed the extent to which their team leader exhibited directive and participative leadership. The team members also rated the level of task interdependence. The personnel department provided objective information on educational levels. Two months after collecting the team member data, we gathered team leader ratings of team performance.

Team sizes ranged from 2 to 35 team members (\(M = 11.63, SD = 7.57\)). Team members’ average team tenure ranged from 3 to 69 months, with a mean of 18.61 months. 62% of the participants and 52% of the leaders were female. Individuals’ mean age was 33.95 years (SD = 9.83) and ranged from 17 to 62 years. Team leaders were on average 33.91 years old (SD = 5.47; range: 23-48). To ensure that our analysis incorporated an appropriate reflection of the team’s perception of leadership (i.e., direct consensus model; Chan, 1998), we included only those teams in our sample in which at least 40% of the team members had participated in the survey (team participation rate: \(M = 73\%\), range: 40-100%). Moreover, only those teams were included from which we had received team performance ratings from the respective team leaders.

MEASURES

Educational level diversity. The company’s personnel department provided us with objective information on individual team members’ highest educational attainments. There were five categories represented: each of the three tiers of the German high school system (which is different from the U.S. system in that it offers three, rather than just one type of high school

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5 To account for the possibility that this partly nested data structure (i.e., some of the teams were nested under the same supervisor) affected our results, we also tested our hypothesis with hierarchical linear modeling (HLM). Since the obtained HLM findings (available from the first author upon request) were consistent with the results from hierarchical regression analyses, we subsequently report only the latter.
diploma, with each offering different opportunities and job prospects for graduates), degrees obtained from a school of applied sciences (which emphasize teaching and job skills training), and university degrees\(^6\). Following Harrison and Klein’s (2007) rationale that the operationalization of diversity should correspond with its conceptualization (in this case diversity as variety of task-relevant resources, knowledge, skills, and experience), we measured educational level diversity with Blau’s (1977) index of heterogeneity as the most widely used measure to capture these qualitative differences in a team. Blau’s index is measured as 

\[
\text{Blau} = 1 - \sum_{i=1}^{k} p_i^2,
\]

where \(p_i\) is the proportion of the \(i\)th diversity category in the group.

Indicating the number and spread of different qualitative categories (in this case educational levels) present in a team, it is at its maximum when each member of a group belongs to a different category\(^7\). As the index ranges from zero to \((k - 1)/k\), its maximum is a function of the number of diversity categories, with an increasing upper limit for Blau’s index as the number of qualitatively different categories increases (Biemann & Kearney, 2010).

Moreover, the average score of Blau’s index increases with growing team size (Harrison & Klein, 2007). Adjusting its upper limit for team size (by making the index independent of team size) is thus crucial for obtaining unbiased variety indices (Biemann & Kearney, 2010). Given that our sample was composed of teams with varying team sizes, we used the suggested adjusted formula (Biemann & Kearney, 2010) to calculate each team’s educational level diversity: 

\[
\text{Blau}_N = 1 - \sum_{i=1}^{k} \frac{N_i(N_i-1)}{N(N-1)},
\]

where \(N_i\) is the absolute number of team members in the \(i\)th diversity category and \(N\) is the total number of members on a team. The index ranges from 0 (no variety) to 1 (absolute variety)\(^8\).

For the scales described below, we created German versions of all scales by means of the widely used translation-back-translation procedure (Brislin, 1980).

**Participative leadership.** We measured participative leadership by four items based on Northouse (2009), who adapted a scale from Indvik (1986, 1988) and House and Dessler (1974). For instance, team members indicated how often their team leader “consults with subordinates when facing a problem” and “listens receptively to subordinates’ ideas and suggestions.” The

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\(^6\) We did not differentiate between undergraduate and graduate degrees because until recently, German universities mainly offered “Diplomas”, which are comparable to master’s degrees, but no degrees that are comparable to bachelor’s degrees.

\(^7\) For instance, Blau’s index for a team in which each of the five members belongs to a different educational category is 1 minus the sum of five times .04 (i.e., 1/5\(^2\)), resulting in a value of .80.

\(^8\) For instance, Blau’s index for a team in which each of the five members belongs to a different educational category is 1 minus the sum of five times 0 (i.e., 1*0/5*4), resulting in a value of 1.00.
response format ranged from 1 ("never") to 5 ("always"). Coefficient alpha reliability for this scale was .81.

**Directive leadership.** To measure directive leadership, we used four items based on Northouse (2009) that were adapted from a scale from Indvik (1986, 1988) and House and Dessler (1974). For example, respondents indicated how often their leader “informs subordinates about what needs to be done and how it needs to be done” and “explains the level of performance that is expected of subordinates.” The response format again ranged from 1 ("never") to 5 ("always"). The coefficient alpha reliability for this scale was .72.

**Team performance.** Two months after collecting team member data, team leaders rated the performance of their respective teams using five items adapted from Kirkman and Rosen’s (1999) team productivity scale. Sample items were, “This team completes its tasks on time” and “This team is a productive team.” The response format ranged from 1 (“completely disagree”) to 7 (“completely agree”). Coefficient alpha reliability for this scale was .89.

**Control variables.** In line with prior research (Kearney & Gebert, 2009; Pelled et al., 1999; Shin & Zhou, 2007; Tsui & Gutek, 1999), we included task interdependence, team size, mean team tenure, mean team member age, as well as team tenure diversity and age diversity as controls to account for the potential effects of these variables on team performance. We measured task interdependence with three items adapted from Van der Vegt and Janssen (2003). We used a five-point response format (ranging from “completely disagree” to “completely agree”) for this scale, whose coefficient alpha reliability was .84. We also calculated mean team tenure as the average number of months that the members had been on the team and operationalized both team tenure diversity and age diversity via the standard deviation of the respective variable (Harrison & Klein, 2007). Whereas the team members provided the data on team tenure, the personnel department supplied the data on team age composition and team size.

**Data aggregation.** To justify the aggregation of our constructs to the team level, we calculated median $r_{wg(I)}$ values (James, Demaree, & Wolf, 1984), which indicate the extent of agreement among team members. In addition, we calculated intraclass correlation coefficients (Bliese, 2000) to examine the ratio of between-group to total variance (ICC[1]), corrected for the average team size (Biemann, Cole, & Voelpel, 2012), the respective F-tests, and the reliability of team members’ average ratings (ICC[2]). These values were .84 ($r_{wg(I)}$), .16 (ICC[1]), $F$(155,
1077) = 2.55, \( p < .01 \), and 0.61 (ICC[2]) for participative leadership, 0.88 (\( r_{wg[J]} \)), 0.20 (ICC[1]), \( F(155, 1077) = 2.98, \ p < .01 \), and 0.66 (ICC[2]) for directive leadership, and 0.72 (\( r_{wg[J]} \)), 0.11 (ICC[1]), \( F(155, 1077) = 1.94, \ p < .01 \), and 0.49 (ICC[2]) for task interdependence. Together, these values justify aggregating constructs to the team level of analysis (George, 1990; Glick, 1985; James et al., 1984).

**Confirmatory factor analysis.** Prior to testing our hypotheses, we conducted a confirmatory factor analysis (CFA) to examine the hypothesized factor structure of our leadership and task interdependence measures, both in absolute terms and in relation to the fit of other conceivable models (Kelloway, 1998). In line with our assumption, a three-factor model comprising participative leadership, directive leadership, and task interdependence yielded a good fit to our data (\( \chi^2_{[40]} = 205.05 \); RMSEA = 0.06; CFI = 0.96; SRMR = 0.04). By contrast, a two-factor model that combined participative and directive leadership into one factor yielded a poorer fit (\( \chi^2_{[42]} = 305.41 \); RMSEA = 0.07; CFI = 0.93; SRMR = 0.05) and differed significantly from our proposed model (\( \chi^2_{[2]} = 100.36, \ p < .01 \)). Moreover, the fit of another alternative model that combined participative leadership, directive leadership, and task interdependence into one factor (\( \chi^2_{[43]} = 1547.76 \); RMSEA = 0.17; CFI = 0.61; SRMR = 0.12) was also significantly lower than that of our hypothesized three-factor model (\( \chi^2_{[3]} = 1342.71, \ p < .01 \)).

**RESULTS**

Table 2.1 presents the means, standard deviations, and zero-order correlations among the study variables. Educational level diversity was not significantly related to team performance. Participative and directive leadership were positively related, but, somewhat surprisingly, neither leadership behavior was significantly related to team performance.

To test our Hypothesis, we conducted a hierarchical regression analysis with mean-centered predictor variables to facilitate interpretability (Aiken & West, 1991). In the first step of the regression analysis, we entered the control variables. In the second step, we added the predictor variables (educational level diversity, participative leadership, and directive leadership). In the third step, we entered the two-way interaction terms (educational level diversity X participative leadership, educational level diversity X directive leadership, participative leadership X directive leadership). Finally, in the fourth step, we added the three-way interaction among educational level diversity, participative leadership, and directive leadership. Table 2.2 summarizes the results.
**Table 2.1. Means, Standard Deviations, and Correlations**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>s.d.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Task interdependence</td>
<td>3.49</td>
<td>0.54</td>
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<tr>
<td>2. Team size</td>
<td>11.63</td>
<td>7.57</td>
<td>-0.19*</td>
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<td></td>
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<tr>
<td>3. Mean team tenure</td>
<td>18.61</td>
<td>11.81</td>
<td>0.26**</td>
<td>-0.11</td>
<td></td>
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<tr>
<td>4. Mean team member age</td>
<td>34.05</td>
<td>4.01</td>
<td>-0.00</td>
<td>0.11</td>
<td></td>
<td></td>
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<tr>
<td>5. Tenure diversity</td>
<td>12.00</td>
<td>9.99</td>
<td>0.22**</td>
<td>0.09</td>
<td>0.82**</td>
<td>0.27**</td>
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<tr>
<td>6. Age diversity</td>
<td>7.96</td>
<td>3.14</td>
<td>-0.33**</td>
<td>0.48**</td>
<td>-0.23**</td>
<td>0.44**</td>
<td>-0.01</td>
<td></td>
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<tr>
<td>7. Educational level diversity</td>
<td>0.59</td>
<td>0.28</td>
<td>0.17*</td>
<td>0.10</td>
<td>0.11</td>
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<tr>
<td>8. Participative leadership</td>
<td>3.82</td>
<td>0.48</td>
<td>-0.01</td>
<td>0.00</td>
<td>-0.08</td>
<td>-0.14†</td>
<td>0.01</td>
<td>0.04</td>
<td>0.03</td>
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<tr>
<td>9. Directive leadership</td>
<td>3.97</td>
<td>0.41</td>
<td>-0.41**</td>
<td>0.25**</td>
<td>-0.43**</td>
<td>0.00</td>
<td>-0.32**</td>
<td>0.44**</td>
<td>0.04</td>
<td>0.37**</td>
<td></td>
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<tr>
<td>10. Team performance</td>
<td>5.10</td>
<td>1.09</td>
<td>0.14†</td>
<td>0.01</td>
<td>-0.11</td>
<td>0.00</td>
<td>-0.13</td>
<td>0.01</td>
<td>0.06</td>
<td>0.15†</td>
<td>0.07</td>
</tr>
</tbody>
</table>

Note. N = 156 teams. † p < .10. * p < .05. ** p < .01.
### Table 2.2. Results of Hierarchical Regression Analyses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Team performance</th>
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<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
<td>Step 3</td>
<td>Step 4</td>
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<tr>
<td><strong>Step 1: Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task interdependence</td>
<td>.40* (.17)</td>
<td>.38* (.19)</td>
<td>.34† (.19)</td>
<td>.34† (.19)</td>
</tr>
<tr>
<td>Team size</td>
<td>.01 (.01)</td>
<td>.01 (.01)</td>
<td>.01 (.01)</td>
<td>.01 (.01)</td>
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<tr>
<td>Mean team tenure</td>
<td>-.00 (.01)</td>
<td>.00 (.02)</td>
<td>.00 (.02)</td>
<td>-.01 (.02)</td>
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<tr>
<td>Mean team member age</td>
<td>.01 (.03)</td>
<td>.02 (.03)</td>
<td>.03 (.03)</td>
<td>.03 (.03)</td>
</tr>
<tr>
<td>Tenure diversity</td>
<td>-.02 (.02)</td>
<td>-.02 (.02)</td>
<td>-.03† (.02)</td>
<td>-.02 (.02)</td>
</tr>
<tr>
<td>Age diversity</td>
<td>.01 (.04)</td>
<td>-.01 (.04)</td>
<td>-.01 (.04)</td>
<td>-.02 (.04)</td>
</tr>
<tr>
<td><strong>Step 2: Main effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational level diversity</td>
<td>.20 (.33)</td>
<td>.20 (.35)</td>
<td>-.13 (.37)</td>
<td></td>
</tr>
<tr>
<td>Participative leadership</td>
<td>.34† (.20)</td>
<td>.29 (.21)</td>
<td>.37† (.21)</td>
<td></td>
</tr>
<tr>
<td>Directive leadership</td>
<td>.07 (.29)</td>
<td>.02 (.30)</td>
<td>.00 (.29)</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3: Two-way interactions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational level diversity x participative leadership</td>
<td>1.53* (.77)</td>
<td>2.40** (.83)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational level diversity x directive leadership</td>
<td>-.80 (.77)</td>
<td>-.78 (.76)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participative leadership x directive leadership</td>
<td>.29 (.46)</td>
<td>-.10 (.48)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 4: Three-way interaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational level diversity x participative leadership x directive leadership</td>
<td></td>
<td></td>
<td>5.26* (2.10)</td>
<td></td>
</tr>
</tbody>
</table>

*R² = .05  .08  .11  .15  
Δ*R² = .05  .03  .03  .04*  
*F = 1.39  1.42  1.42  1.85*  

**Note.** N = 156 teams. Unstandardized regression coefficients are reported (with standard errors in parentheses). † p < .10. * p < .05. ** p < .01.
In support of our Hypothesis, adding the three-way interaction term in the fourth step of the regression explained a significant amount of variance over and above the variance explained by the control variables, the main effects, and the three two-way interactions ($\Delta R^2 = .04$, $F = 6.29$, $p = .01$). The regression coefficient for the three-way interaction term was significant ($b = 5.26$, $t = 2.51$, $p = .01$), and simple slope analyses (Aiken & West, 1991) conducted for high and low levels of both moderators (one standard deviation above and below the mean, respectively) revealed that the relationship between educational level diversity and team performance was significantly positive when leaders displayed high levels of participative and directive behaviors ($b = 1.74$, s.e. = .75, $\beta = .45$, $p = .02$). By contrast, the three other slopes were non-significant or negative: When only participative leadership was high, but directive leadership was low ($b = .31$, s.e. = .72, $\beta = .08$, $p > .10$) and when both participative and directive leadership were low ($b = .07$, s.e. = .45, $\beta = .02$, $p > .10$), the relationship between educational level diversity and team performance was non-significant. When only directive leadership was high, but participative leadership was low, educational level diversity was negatively associated with team performance ($b = -2.64$, s.e. = .98, $\beta = -.68$, $p < .01$).

We also followed the procedure recommended by Dawson and Richter (2006) to test the significance of slope differences in three-way interactions. Whereas the slope representing the association between educational level diversity and team performance for high levels of both participative and directive leadership was most strongly positive, it was less positive when both participative and directive leadership were low ($t[142] = 1.93$, $p = .06$), or when either only directive leadership ($t[142] = 3.20$, $p = < .01$) or only participative leadership was high ($t[142] = 1.38$, $p = .17$), with the respective other leadership behavior being low.

Overall, these results, depicted in Figure 2.1, are in line with our Hypothesis. The link between educational level diversity and team performance was most strongly positive when both participative and directive leadership were high rather than either one or both being low.
UNLOCKING THE POTENTIAL OF TEAMS

FIGURE 2.1. The Relationship between Educational Level Diversity and Team Performance for High and Low Levels of Directive and Participative Leadership.

DISCUSSION

Responding to calls to more thoroughly investigate how leadership affects the link between team diversity and team performance (e.g., Jackson & Joshi, 2011), we examined interactive effects of educational level diversity and participative as well as directive leadership on team performance. As hypothesized, the relationship between educational level diversity and team performance was most strongly positive when levels of both participative and directive leadership were high rather than one or both of these behaviors being low.

This research advances the respective literatures on team diversity, team leadership, and the integration of these two phenomena. First, concerning the team diversity literature, scholars have noted that main effects models have yielded disappointing results and that more complex models are needed (e.g., Nishii & Mayer, 2009; van Knippenberg & Schippers, 2007). While most of the research on team diversity has focused on variables such as race/ethnicity, gender, age, tenure, functional background or educational specialization (Jackson & Joshi, 2011), our study may be one of the first to investigate the conditions under which educational level diversity is more or less positively associated with team performance. Given that in contexts such as the
customer service and sales teams we examined, educational level diversity entails both benefits and drawbacks, it is important to understand what situational factors help to promote the former and curtail the latter. Our research shows that a combination of high participative and high directive leadership may engender such effects. Our study thus contributes to the literature on how best to leverage the potential of diverse teams by identifying moderators of the diversity-performance link over which leaders arguably have more control than over previously examined moderators such as task type and task interdependence (e.g., Jehn et al., 1999), time spent together (Harrison et al., 1998), and team member personality (Kearney et al., 2009).

Second, with regard to the team leadership literature, our work underscores the point made by Judge et al. (2004) that it would be inadvisable to conclude that classic leadership concepts should be viewed as obsolete. Despite having received little research attention in recent decades as the field has moved on to newer constructs such as transformational, empowering, and authentic leadership (e.g., Avolio, Walumbwa, & Weber, 2009), some classic leadership concepts may hold value and should be reexamined in the context of newer questions that were never addressed in the heyday of these theories. Contrary to the negative verdict of the 1970s (e.g., Larson et al., 1976; Nystrom, 1978), our findings suggest that in a specific context such as the educationally diverse customer service and sales teams we studied, the “High-High leader” concept (Blake & Mouton, 1964; 1982) may, in fact, be highly useful. We thus also address one of the major criticisms held against the “High-High leader” concept, namely that it fails to take into account situational particularities that may call for specific leadership approaches (Yukl, 2010). Hence, while the “High-High leader” concept is unlikely to be universally beneficial across all situations (e.g., Larson et al., 1976), our results indicate that it may be most applicable in a more circumscribed context such as the effort to lead educationally diverse teams.

Finally, with respect to the nascent literature that examines interactions between diversity and leadership (e.g., Kearney & Gebert, 2009; Nishii & Mayer, 2009), our research goes beyond previous work by not only studying the isolated effects of leadership styles, but also examining the joint effects of two different leadership behaviors (participative and directive) on the team diversity-team performance link. Thus, our findings indicate that the effects of leadership on this link may depend upon how specific leadership behaviors are combined with other leader actions. For example, followers may interpret directive leadership such as providing detailed instructions and close monitoring, exhibited by participative leaders as helpful and supportive, whereas the same behaviors enacted by directive leaders who do not invite participation may be viewed as a lack of trust and as micromanagement. Moreover, directive leaders who are also participative may be able to draw on both position and personal (e.g., “referent”) power, whereas directive
leaders who do not encourage participation may hold less personal power over their followers (Yukl, 2010). As Jackson and Joshi (2011, p., 674) recently noted, “... diverse work teams hold the potential for being either very effective or very troubled.” Our findings are in support of our argument that this dual effect of leveraging the potential benefits of diversity while at the same time curtailing its potential drawbacks may best be achieved by combining leadership behaviors in such a way that each behavior not only offers advantages (e.g., psychological empowerment in the case of participative leadership as well as alignment of efforts in the case of directive leadership), but also helps to counteract the potential negative effects of the behavior with which it is being combined (e.g., a lack of alignment in the case of participative leadership and a lack of psychological empowerment in the case of directive leadership).

Interestingly, our findings also hint at the possibility that diverse teams may be more harmfully affected by unbalanced combinations of leadership than by low levels of leadership behaviors when these are balanced: Low levels of both participative and directive leadership did not influence educationally diverse teams more adversely than homogeneous teams (see Figure 2.1). However, when directive leadership was provided without its respective counterpart – participative leadership – educationally diverse teams’ performance was strongly negatively affected. Directive leadership alone seems to undermine the possibility that specific benefits can arise from different educational levels in customer service and sales teams (e.g., tailoring strategies to different customer groups). Only by its joint application with participative leadership that provides a basis for learning about differential approaches, directive leadership entails beneficial effects to diverse teams. By contrast, participative leadership does not harm diverse teams’ performance when enacted without directive leadership (see Figure 2.1). Nevertheless, it can only fully leverage the performance potential of educationally diverse teams when provided together with directive leadership.

Our results also suggest that educationally homogeneous teams benefit more from leadership that provides guidance and direction, without allowing too much focus on sharing of differential ideas and making different viewpoints accessible to the rest of the team (i.e., high directive, but low participative leadership; see Figure 2.1). Prior research has shown that discussions can increase decision quality and contribute to team success when the discussed information is unique, and its sharing can thus lead to better solutions (Stasser & Titus, 1985). However, teams that are rather homogeneous are more likely to have more similar pools of knowledge and expertise, and thus may benefit less from intense discussions and joint decision-making. While in this case, a strong emphasis on participation may even hinder homogeneous
teams’ efficient use of time and resources and compromise their goal-directed action, a leader’s directive promotion of task fulfillment may be more conducive to team performance.

**LIMITATIONS AND FUTURE RESEARCH**

Despite the lagged design, our study does not permit causal inferences. Replications of our study in experimental settings would be needed to establish the direction of causality that underlies our assumptions. Second, we relied on subjective team leader ratings of performance. We did this based on Kozlowski and Klein’s (2000) argument that it is appropriate to rely on ratings of single experts if such experts are in a good position to evaluate the phenomenon to be rated and have access to the relevant information. However, it would be desirable for future studies to obtain objective performance data whenever possible. Third, in line with Harrison and Klein’s (2007) recommendation to select the diversity conceptualization on the basis of the specialties of the sample, we conceptualized educational level diversity as variety of task-relevant informational resources in this study (i.e., customer service and sales teams that may benefit from a broadened range of different educational levels when interacting with different customers that presumably all have different educational backgrounds and levels). Given our specific sample and the specific requirements of the teams’ customer-oriented work, we believe that our conceptualization of diversity as variety is appropriate. Nevertheless, other conceptualizations of educational level diversity such as disparity (i.e., an unequal distribution of education as valuable resource in teams, leading to a few members with very high power and many members with nearly no power) may also be meaningful in this regard. Future research in other study settings and team contexts may delineate boundary conditions of when educational level diversity can entail variety, and when it is more indicative of disparity in a team, and whether the requirements with respect to leadership or leadership combinations may differ for these teams. Fourth, we are limited in our ability to draw definitive conclusions about the processes whereby the interaction of diversity and participative and directive leadership may affect performance because we did not examine mediation. However, the mechanisms we assume to exist (e.g., participative and directive leadership each helping to curtail the negative effects of the respective other behavior) are not easily operationalized. Nevertheless, we would encourage researchers to extend our findings by examining more proximal dependent variables than team performance such as team emergent states and team processes (cf. LePine, Piccolo, Jackson, Mathieu, & Saul, 2008; Marks, Mathieu, & Zaccaro, 2001). Moreover, further studies are needed to ascertain the generalizability of our findings to other contexts. But we view this less as a limitation than as a call for further research because it was our expressed purpose to
examine the utility of the “High-High leader” concept in a specific context. We would not expect future research to reverse the negative verdict on this classic leadership idea (e.g., Larson et al., 1976) if one assumes its universal generalizability. Instead, we contend that the concept only holds value in certain contexts and that it would be promising to conduct further research that aims to identify other such contexts beyond the one we focused on in the present study. Finally, we believe that more studies are needed that study combinations (i.e., interactive effects) of different leadership styles and behaviors, rather than merely examine their respective isolated effects.

**CONCLUSION**

Managing diversity and attempting to turn a broader range of backgrounds and perspectives into an asset that benefits performance is one of the major current and future challenges for leaders (Yukl, 2010). Enacting the appropriate leadership behaviors is likely to be a decisive factor in this endeavor. In managing educationally diverse teams, our study suggests that neither participative nor directive behaviors by themselves are sufficient to leverage the potential that heterogeneity entails and that leaders would be well advised to strive to combine these behaviors. Our results underscore the value of reexamining classic leadership concepts in the context of new leadership challenges and stand in stark contrast to the conclusion drawn by other authors (e.g., Larson et al., 1976) who called the “High-High leader” paradigm “a myth that should be abandoned” (Nystrom, 1978, p. 330).