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Comparing intrinsic and extrinsic motivation in bilingual children and their monolingual peers

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Building from previous research showing a bilingual advantage in school, the present study investigated the link between bilingualism and academic motivation. We asked whether bilingual students would exhibit higher levels of intrinsic or extrinsic motivation than their monolingual peers, how intrinsic and extrinsic motivation would change over time, and the extent to which those forms of motivation would be in tension with one another. Relative to their monolingual peers, we expected bilingual students to (1) report higher levels of both intrinsic and extrinsic forms of motivation, and (2) show a weaker negative correlation between intrinsic and extrinsic forms of motivation. Bilingual status, intrinsic motivation, and extrinsic motivation were measured at two time points in a diverse sample of 1047 3rd-grade through 8th-grade students (851 monolingual, 196 bilingual). Bilingual students reported significantly higher levels of both intrinsic and extrinsic motivation than monolingual students. They also showed a sharper decline in intrinsic motivation from fall to spring. Intrinsic and extrinsic forms of motivation were negatively correlated for monolinguals, but unrelated for bilinguals, suggesting that the two motive types may be less antagonistic among students who speak a language other than English at home. These differences may be driven by both cognitive (e.g., executive functioning skills) and cultural (e.g., family cohesion, interdependent orientation) factors, and may inform educators who wish to support learning for students from diverse groups.

KEYWORDS

academic motivation, intrinsic motivation, extrinsic motivation, Schoolchildren, bilingual

1. Introduction

Students in the United States who speak a language other than English at home have unique experiences that distinguish them from their monolingual or monocultural classmates. Their bilingual status in particular may confer certain advantages in school. Indeed, children of immigrants who retain their parents' country-of-origin language have higher GPAs (Portes and Hao, 1998), do better on standardized tests in both math and

reading, and have higher educational aspirations than children of immigrants who only speak English (Portes and Schauffler, 1994). Although these advantages may be largely motivational in nature, the specific motivational patterns of bilingual students remain largely unexplored.

Motivation in school is essential because it drives learning and achievement (Stipek, 2002). Although motivation can be conceptualized as a unidimensional construct varying in quantity or amount, motivation also differs based on quality or type (Ryan and Deci, 2020). Psychologists have classically distinguished motivation that is *intrinsic* (i.e., inherent to the self or task, volitional) from that which is *extrinsic* (i.e., originating from others, controlled) in nature (Lepper et al., 1973; Ryan and Deci, 2020). Intrinsic and extrinsic forms of motivation are distinct not only in their origins but also in their consequences for learning and well-being, with more intrinsic forms generally showing more adaptive value (Taylor et al., 2014; Howard et al., 2021). The present study sought to discover whether the bilingual advantage in school extends to academic motivation and – if so – whether a motivational advantage is intrinsic or extrinsic in nature. As described below, we considered both cognitive and cultural factors that may drive a bilingual advantage.

2. Bilingualism and cognitive flexibility

A large body of research has shown that executive functioning is more efficient in bilingual children and adolescents than in their monolingual peers (Bialystok, 2001, 2006; Colzato et al., 2008; Wiseheart et al., 2016). As such, bilingual children typically outperform monolingual children on tasks of cognitive control (Barac et al., 2014). Although the nuances of this advantage are hotly debated (e.g., Chen et al., 2014; Moreno-Stokoe and Damian, 2020), it appears to be rooted in bilingualism itself, not dependent on cultural or economic factors (Bialystok and Viswanathan, 2009; Calvo and Bialystok, 2014).

Advantages in cognitive flexibility and self-regulation have implications for children's achievement and motivation in school (Zimmerman and Kitsantas, 2014; Spiegel et al., 2021). The ability to control one's attention and flexibly navigate classroom demands may support bilingual students' *extrinsic* motivation in that they can skillfully track the demands of each teacher and respond accordingly. There could also be positive feedback loops that build bilingual students' *intrinsic* motivation. Better cognitive control may enhance perceived competence, which is a well-documented source of intrinsic motivation (Ryan and Deci, 2016; Miyamoto et al., 2018; Ahn et al., 2021). Moreover, high achievement itself tends to be positively and reciprocally related to motivation that is intrinsic in nature (Garon-Carrier et al., 2016; Hebbeker et al., 2019). A bilingual advantage in cognitive flexibility, therefore,

may suggest a bilingual advantage in *both* intrinsic and extrinsic forms of motivation – a hypothesis tested in the current study.

3. Cultural factors and the bilingual advantage

In addition to cognitive factors, there are a number of cultural factors that may drive a bilingual advantage. Adolescents from first and second generation immigrant households – the majority of whom are bilingual (The Urban Institute, 2020) – tend to receive higher grades than students in non-immigrant households (Fuligni, 1997). Children of immigrants also have higher educational aspirations and report higher interest in school than their native-born peers (Feliciano and Lanuza, 2016). These educational benefits may be especially pronounced for children who retain the country-of-origin language alongside English – i.e., those who are fully bilingual (Portes and Schauffler, 1994; Portes and Hao, 1998). Students who share a language with their parents experience greater family communication and cohesion, which increases the salience of parents' expectations regarding work habits and academic achievement (Fuligni, 1998; Tseng and Fuligni, 2000; Portes and Hao, 2002). Daily diary research has shown that this sense of connection and family obligation predicts academic motivation in the form of time spent studying on a daily basis (Hardway and Fuligni, 2006). Bilingual students appear to express their sense of family connection by working hard in school.

Retaining parents' country-of-origin language alongside English also provides access to a form of cultural capital unavailable to children who speak only English. Among Mexican-origin high schoolers in the Bay Area, for example, there was a meaningful difference in social capital between students who were fully bilingual versus dominant in either Spanish or English. The bilingual students sought help from a wider range of people, and, in turn, were more likely than their peers to receive genuine support from institutional agents such as school personnel (Stanton-Salazar and Dornbusch, 1995). This suggests a unique role of language that can ultimately enhance motivation and achievement for bilingual students.

It is unclear, however, whether a motivational advantage would be intrinsic or extrinsic in nature. With evidence for stronger interest in school, this might suggest higher levels of intrinsic motivation. At the same time, the higher educational aspirations of bilingual immigrant populations appear strongly grounded in family obligation, which might suggest higher levels of extrinsic motivation. A recent dissertation found evidence for both: bilingual elementary school students reported higher intrinsic motivation for writing than their native English monolingual peers. Those who had graduated from English Language Development programs also showed higher levels of extrinsic motivation for writing (Camping, 2021). These findings raise the possibility that bilingual students may experience higher levels of both intrinsic and extrinsic forms of motivation in school compared to their monolingual peers.

4. The relationship between intrinsic and extrinsic forms of motivation

Beyond absolute levels of motivation, it is also important to consider how bilinguals may experience the relationship between different types of motivation. Intrinsic and extrinsic forms of motivation are often portrayed as mutually exclusive. Indeed, small but consistent negative correlations have been found between intrinsic and extrinsic motivation in research with students in the United States (Lepper et al., 2005; Corpus et al., 2009). However, evidence suggests that this dichotomy may be culturally specific. Lepper et al. (2005) found that intrinsic and extrinsic forms of motivation were less negatively correlated among Asian-American students than their Euro-American peers. Among the Asian-American students, there was a *positive* correlation between intrinsic motivation and the extrinsic desire to please teachers (Lepper et al., 2005). Such findings might be attributable to the way that external pressure is interpreted in more interdependent cultures. Fulfilling external expectations may be viewed as valuable to the harmony of and belongingness to the in-group, rather than as a threat to one's sense of autonomy (Iyengar and Lepper, 1999).

Similar to the influence of culture, there is growing evidence that students from minority groups also exhibit a distinct relationship concerning intrinsic and extrinsic motivation (Yates and Patall, 2021). As the long history of discrimination in the United States threatens the survival of Black individuals, the importance of utilizing resources that are controlled by external factors is especially salient (Baldwin, 1981). Black students also experience tension between home- and school-based values (Tyler et al., 2006), which may require particular attention to external pressure, perhaps even leveraging it to their advantage. In support of this argument, Yates and Patall (2021) found that intrinsic and extrinsic forms of motivation were *positively* correlated among Black American high school students, and the presence of extrinsic motivation actually predicted *higher* levels of intrinsic motivation over time (Yates and Patall, 2021).

Given the cultural and societal factors shaping the relationship between intrinsic and extrinsic forms of motivation, it is plausible that bilingual students may show a distinct pattern compared to their monolingual peers. Bilingual students likely have more interdependent cultural backgrounds, which may lead them to perceive extrinsic forms of motivation differently than their peers with individualistic values. Bilingual students may also show patterns similar to Black Americans as they are more likely to come from language minority families (Portes and Zhou, 1993), and may similarly seek to leverage social resources for upward mobility. Therefore, we expected the relationship between intrinsic and extrinsic forms of motivation to be less antagonistic (i.e., less negative) among bilingual students compared to monolingual students.

5. The present study

In summary, the present study addressed three research questions using a large longitudinal dataset of third-through eighth-grade students (Corpus et al., 2009):

- (1) Are there differences between bilingual and monolingual students in their levels of intrinsic and extrinsic motivation? Because bilingual students have several advantages that may contribute to academic motivation (e.g., cognitive flexibility, high educational aspirations, family obligation to perform well), we hypothesized that they would report higher levels of both intrinsic and extrinsic forms of motivation than their monolingual peers.
- (2) What is the relationship between intrinsic and extrinsic forms of motivation for bilingual versus monolingual students? As suggested above, the cultural and societal differences between language minority students and their English monolingual peers raise the possibility that intrinsic and extrinsic forms of motivation are not necessarily mutually exclusive among bilinguals. Therefore, we hypothesized that bilingual students would show a weaker negative correlation between intrinsic and extrinsic forms of motivation than their monolingual peers.
- (3) To what extent do intrinsic and extrinsic motivation change over the course of an academic year for bilingual versus monolingual students? Previous research using the same dataset showed a significant fall-to-spring decline in levels of both intrinsic and extrinsic motivation for the full sample (Corpus et al., 2009). We asked whether this same pattern would hold for both bilingual and monolingual students. We posed this as an exploratory question given the lack of previous research on which to base a formal hypothesis.

6. Materials and methods

6.1. Participants and procedure

Data were drawn from a longitudinal study of motivational change among third- through eighth-grade children from Portland, Oregon, which was approved by the Institutional Review Board at Reed College (see Corpus et al., 2009). Students from seven schools were invited to complete surveys at school in both the fall and the spring of a single academic year (for additional details on recruitment and study procedures, see Corpus et al., 2009). The present analysis included 1,047 students, 851 of whom were English monolinguals and 196 of whom were bilingual. The English monolingual students (55% female, 45% male) largely identified as Caucasian (88.4%) with smaller groups of Black (7.6%), Asian (6.8%), Native American (6.2%), and Hispanic (4.7%) students. The bilingual students (57% female, 43% male), by

contrast, identified primarily as Hispanic (38.3%), Caucasian (35.2%), and Asian (32.1%), with smaller groups of Black (4.6%) and Native American (2.0%) students. Race/ethnicity groups were not mutually exclusive.

6.2. Measures

6.2.1. Language status

As part of the fall survey administration, students reported demographic information (gender, race), including what language they spoke at home. Students who listed only English were considered English monolinguals. Students who listed any language other than English (regardless of whether they also listed English) were considered bilinguals. The data made available to us included only this binary classification, without information about the specific language that students spoke. Based on information provided by the participating schools, the most common languages spoken in their student populations were Spanish, Mandarin, Russian, and Vietnamese.

6.2.2. Intrinsic and extrinsic motivation

Both intrinsic and extrinsic motivation were measured with reliable and valid scales from Lepper et al. (2005) and Corpus et al. (2009). In addition to strong internal consistency and test-retest reliability, the predictive validity of the scales has been documented *via* unique links to both academic achievement and teacher ratings of motivation (see Lepper et al., 2005; Corpus et al., 2009). Intrinsic motivation was assessed in the both the fall and the spring with 17 items tapping students' challenge-seeking ("I like to go on to new work that's at a more difficult level"), curiosity based engagement ("I read things because I am interested in the subject"), and desire for independent mastery ("I like to try to figure out how to do school assignments on my own"; see Corpus et al., 2009). Students responded using a 5-point Likert scale, with 1 = *not like me at all* and 5 = *exactly like me*. Scores for each item were averaged together to form a composite variable, a procedure that was validated by Corpus et al. (2009) through hierarchical confirmatory factor analysis. In the present study, the scale was internally consistent for both monolingual ($\alpha = 0.91$ fall, 0.91 spring) and bilingual ($\alpha = 0.91$ fall, 0.92 spring) students.

Extrinsic motivation was assessed in both the fall and the spring with 16 items tapping students' desire for easy work ("I do not like difficult schoolwork because I have to work too hard"), orientation toward pleasing authority figures ("I do my schoolwork because it makes my parents happy"), and a dependance on the teacher for guidance ("I like the teacher to help me plan what to do next; see Corpus et al., 2009). Students responded using a 5-point Likert scale, with 1 = *not like me at all* and 5 = *exactly like me*. Scores for each item were averaged together to form a composite variable, a procedure that was validated by Corpus et al. (2009) through hierarchical confirmatory factor analysis. In the

present study, the scale was internally consistent for both monolingual ($\alpha = 0.83$ fall, 0.86 spring) and bilingual ($\alpha = 0.85$ fall, 0.83 spring) students.

7. Results

Descriptive statistics for each time point by language status are presented in Table 1. The distributions for both intrinsic and extrinsic motivation were within the range of normality, with skewness ranging from -0.01 to -0.26 , and kurtosis ranging from -0.25 to -0.37 .

The first hypothesis was that bilingual students would report higher levels of both intrinsic and extrinsic forms of motivation than their monolingual peers. This was tested through a series of independent sample *t*-tests. As predicted, in the fall survey administration, bilingual students reported significantly higher levels of intrinsic motivation ($M = 3.56$) than their monolingual peers ($M = 3.41$), $t(1045) = 2.54$, $p < 0.05$. They also reported higher levels of extrinsic motivation ($M = 3.37$) than monolingual students ($M = 3.13$), $t(1045) = 4.65$, $p < 0.001$. In the spring survey administration, there was no difference between groups in intrinsic motivation, but bilingual students had significantly higher levels of extrinsic motivation ($M = 3.28$) than their monolingual peers ($M = 3.04$), $t(1045) = 4.40$, $p < 0.001$, providing partial support for the hypothesis. These significant effects were small to medium in size. See Table 1.

The second hypothesis was tested by comparing the Pearson correlation coefficients between intrinsic and extrinsic motivation for monolingual versus bilingual students (Table 2). Consistent with the previous findings on Euro-American students, small to moderate negative correlations between intrinsic and extrinsic motivation were found among monolingual students in the fall ($r = -0.23$, $p < 0.001$) and the spring ($r = -0.32$, $p < 0.001$). As predicted, intrinsic and extrinsic motivation were not significantly correlated among bilingual students (fall $r = 0.05$, $p = 0.50$; spring

TABLE 1 Intrinsic and extrinsic motivation of monolingual and bilingual students.

	Monolinguals		Bilinguals		<i>t</i> (1045)	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
IM Fall	3.41	0.73	3.56	0.77	-2.54*	-0.20
EM Fall	3.13	0.67	3.37	0.69	-4.65***	-0.37
IM Spring	3.32	0.73	3.36	0.78	-0.73	-0.06
EM Spring	3.04	0.70	3.28	0.66	-4.40***	-0.35

Monolinguals $n = 851$, Bilinguals $n = 196$. IM, intrinsic motivation; EM, extrinsic motivation. *** $p < 0.001$. * $p < 0.05$.

TABLE 2 Correlations between intrinsic and extrinsic motivation for monolingual and bilingual students.

	Monolinguals	Bilinguals	Monolingual vs. Bilingual	
	$r_{IM, EM}$	$r_{IM, EM}$	Z	p
Fall	-0.23***	0.05	3.52	<0.001
Spring	-0.32***	0.03	3.95	<0.001

Monolinguals $n = 851$, Bilinguals $n = 196$. IM, intrinsic motivation; EM, extrinsic motivation. *** $p < 0.001$.

$r = -0.01$, $p = 0.84$). Fisher's r to z transformations revealed that the correlations between intrinsic and extrinsic forms of motivation were significantly more negative among monolingual students than the bilingual students in both the fall ($z = 3.52$, $p < 0.001$) and the spring ($z = 3.95$, $p < 0.001$).

The third research question regarding changes over time in levels of intrinsic and extrinsic motivation was tested with a set of 2 (time: fall, spring) \times 2 (language status: monolingual, bilingual) mixed ANOVAs, with repeated measures on the first factor. For intrinsic motivation, there was a significant interaction between time and language status, $F(1,1,045) = 4.79$, $p < 0.05$. Intrinsic motivation declined in both groups from fall to spring, but the decline was more pronounced for bilingual (M change = 0.20) than for monolingual students (M change = 0.09); see Table 1. For extrinsic motivation, the interaction was not significant, such that motivation showed a pattern of modest decline that was equivalent for both bilingual and monolingual students, $F(1,1,045) = 0.02$, $p = 0.88$; see Table 1.

8. Discussion and conclusion

The present study examined motivational patterns among bilingual students at the elementary and middle school level. In comparison to their monolingual peers, bilingual students reported higher levels of intrinsic motivation in the fall and a sharper decline over time, higher levels of extrinsic motivation at both timepoints, and a less antagonistic relationship between intrinsic and extrinsic forms of motivation. Given cultural differences in obedience, obligation, and the emphasis on education as a means of social mobility (Fuligni and Flook, 2005; Feliciano and Lanuza, 2016, 2017), it is not surprising that bilingual students reported higher levels of extrinsic motivation. Perhaps more interesting is their simultaneous endorsement of intrinsic motivation, at least at the fall timepoint. Bilingual students appear not only to be externally driven to engage in their schoolwork (extrinsically motivated), but also to embrace challenges and see the value of learning for learning's sake (intrinsically motivated).

A key theoretical contribution of the present study is that intrinsic and extrinsic forms of motivation were found to

be unrelated among bilingual students – a pattern that differed substantially from that of their monolingual peers. A more compatible relationship between intrinsic and extrinsic motivation for bilingual students is consistent with an emerging body of research indicating cultural specificity in the meaning of extrinsic motivation (e.g., Lepper et al., 2005; Yates and Patall, 2021). For bilingual students who may be strongly affiliated with a more interdependent parent culture, perhaps doing schoolwork to meet parents' expectations and please teachers is fully consistent with doing schoolwork in order to satisfy curiosity or grow as a learner. It will be important for future research to test the correlates of extrinsic motivation among bilingual students. Although maladaptive behaviors and coping mechanisms have often been associated with extrinsic motivation (Howard et al., 2021), this classic model may not fit bilingual students. The present investigation joins the call to consider the cultural relevance of our dominant motivational models for diverse groups of learners (Zusho and Kumar, 2018; Urdan and Kaplan, 2020; Wigfield and Koenka, 2020).

Of course, it is unclear whether the bilingual advantage in the present study was driven by cognitive or cultural factors. It is possible that the experience of speaking two languages affords students cognitive skills that monolingual students cannot access, such as the ability to flexibly adapt to the evolving demands of a classroom setting. At the same time, a majority of the bilingual children in the present sample were likely children of immigrants who retained their parents' country-of-origin language. Speaking the same language as their parents often embeds children in an immigrant culture (Feliciano and Lanuza, 2016) and can help them to discuss school, personal problems, and hopes for the future (Tseng and Fuligni, 2000) – all of which may shape their academic motivation.

Additional survey measures gauging student identification with parent culture and family cohesion could facilitate a more nuanced investigation of the interactions between culture, bilingualism, and motivation. This might reveal, for example, that the motivational patterns observed in the present study do not apply equally to bilingual students with low versus high family cohesion, thus supporting the cultural explanation. It would also be informative to employ the strategy used by Moreno-Stokoe and Damian (2020), who selected a relatively isolated community of children on Gibraltar who had nearly identical cultural upbringings but varied greatly regarding their degree of bilingualism. A future study could choose a similar monocultural population coupled with additional assessments of language fluency to examine the impact on intrinsic and extrinsic forms of motivation.

There were several limitations of the present study. Perhaps most notably, we did not have information about the precise languages spoken by our bilingual participants, their level of proficiency in those languages, or their fluency in English. Because

the impact of bilingualism on schooling experiences in the United States appears to depend heavily on students' degree of fluency in English (Rumbaut, 1994; Fuligni, 1997; Han, 2012; Chen et al., 2014), it would have been informative to compare motivational reports among bilingual students who were still learning English versus fully fluent in the instructional language of their schools. One might imagine that students with lower English proficiency may not show the same motivational advantage relative to monolingual peers – perhaps especially regarding intrinsic motivation.

Another important limitation relates to the non-experimental nature of the present investigation, which cannot establish a causal relationship between bilingual status and academic motivation. Future research should also consider a more extensive longitudinal time frame, perhaps assessing motivation through the high school years. Given that intrinsic motivation declined more sharply over time for bilingual versus monolingual students, it is possible that the motivational advantage of bilinguals would dissipate over time. In addition, it has been established that external factors can negativize emotions, dampening overall motivation (Pishghadam et al., 2019). Therefore, it will be important for future research to consider bilingual students' motivational patterns in light of the emotionally negativizing COVID-19 pandemic. Recent research has documented specific declines in undergraduates' intrinsic motivation as a result of the pandemic (Corpus et al., 2022), and it is possible that the motivation of bilingual students might be different if collected in the era of COVID-19.

Finally, although the present study focused on academic motivation more broadly, insights may be gained by considering the specific motives students have for learning a second language. Research on second language acquisition suggests that supporting students' needs for competence, relatedness, and autonomy promotes both autonomous motivation and vocabulary knowledge (Oga-Baldwin et al., 2017; Alamer, 2022). The specific need for competence, moreover, has been shown to predict lower levels of anxiety among English language learners in Saudi Arabia (Alamer and Almulhim, 2021), which may impact subsequent motivation. The role of basic psychological needs (for competence, relatedness, and autonomy) should be incorporated into future research on academic motivation among bilingual students. Support for these needs would presumably enhance the intrinsic motivation of bilingual students, but it is less clear how extrinsic motivation would be impacted. Although extrinsic motivation is typically associated with need frustration (Vansteenkiste et al., 2020), bilinguals' less antagonistic relationship between intrinsic and extrinsic forms of motivation may suggest a different pattern. This is an exciting avenue for future research.

In conclusion, the present study identified a difference in the motivational realities of bilingual students versus

monolingual students. Understanding what motivates bilingual students and how they conceptualize motivation itself is one tool for educators who wish to better support students' learning.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by Reed College Institutional Review Board. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

DG and LS contributed equally to the project and share first authorship. JC provided the data and supervised the project. LS and JC performed the data analysis. DG, LS, and JC took the lead on writing the manuscript with substantial input from TB and BT. All authors developed the study concept, contributed to the literature review and article, and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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