Roles of Autonomous Motivation, Individualism, and Instructor Support in Student-Centered Learning in South Korea and the United States[*]

Eunbae LEE

The Catholic University of Korea

Korea

Timothy D. BAIRD[**]

Virginia Tech

The United States

It is commonly understood that students' autonomous motivation and individualistic orientations and instructors' autonomy support are important for student-centered learning (SCL). However, few studies have examined this assumption. To help researchers and practitioners design more engaging SCL experiences across diverse cultural contexts, this study examines the associations of these factors with SCL engagement and how these associations compare in different cultures. University students in South Korea and the United States participated in a bold SCL assignment, called Pink Time, in which students decide what and how they learn. Linear, multivariate models were estimated in each context to identify and compare relationships between SCL engagement and student characteristics and perceptions. We found that engagement was high in both contexts. Autonomous motivation, individualism, and perceived instructor support each had significant associations with SCL engagement in South Korea. In the US, which had a smaller sample size, only perceived instructor support was significantly associated. These findings suggest that SCL strategies can be effective across cultures. Also, the narrower classroom context, specifically instructors' support, may be a stronger driver of engagement than the broader societal context. This study contributes to the scholarly discussion regarding SCL in diverse settings and offers several implications for instructors.

Keywords : student-centered learning, engagement, higher education, instructor support, individualism, autonomous motivation

Introduction

In an increasingly global educational landscape, where university students are regularly crossing borders to attend school, classroom strategies are needed to promote course engagement across socio-cultural divides. Diversity is growing in university classrooms bringing together students from different cultural contexts who have wide-ranging perspectives on teaching and learning. This shift creates new challenges and opportunities for instructors. Educators experiment with and assess new educational strategies and tools to promote learning across diverse student groups.

Around the world, there is a growing awareness that students should play an active role in their learning. One manifestation of this in higher education is the expansion of student-centered learning (SCL). SCL is an innovative educational approach in which students identify their learning goals and methods and take responsibility for their own learning (Lee & Hannafin, 2016). During SCL, students navigate the process of setting goals and plans, selecting and using resources, monitoring progress, modifying strategies, and assessing outcomes while their instructors may provide structure and scaffolding and act as facilitators and coaches (Hannafin, Hill, Land, & Lee, 2014). SCL is positioned as an alternative to traditional, teacher-directed, rote instruction, which places more emphasis on core competencies associated with problem solving, critical thinking, creativity, and student empowerment (ISTE, 2016).

In line with SCL, we apply a bold assignment called Pink Time, which provides students with a radical degree of autonomy and opportunity for self-authorship (Baird et al., 2015). First developed in 2013, Pink Time has been adopted in dozens of classes with hundreds of students at several universities in the United States and Canada (Baird et al., 2020). Its format is adjustable to contextual factors and instructors' comfort level; however, its essence is premised on effective scaffolding by instructors, either in-person or online (Baird, 2021), who must first model the

assignment for students and then facilitate reflection and dialogue after students have completed their activities. Scholars of teaching and learning have found Pink Time to be effective in promoting students' self-regulation (Baird et al., 2015), across a range of course- and student-types (Baird et al., 2020; Caruso, 2021).

As such, Pink Time may provide a unique and adaptable SCL approach to be implemented more widely in formal higher education, where students from diverse backgrounds, and with a variety of interests, are frequently enrolled in the same classes. One concern with a radical SCL approach like this, which promotes individualism and self-authorship in the learning process, is that it may be poorly suited for cultural and educational contexts that are more collectivist, where educational norms do not necessarily prioritize student's unique interests and needs (Lee, 2009). However, in more individualist contexts, where greater value may be placed on individuals' characteristics, teachers and students may be more willing to embrace opportunities for students' self-authorship (Oyserman, Coon, & Kemmelmeier, 2002).

To test this hypothesis that context matters with SCL, we applied the Pink Time assignment in courses at universities in South Korea (SK) and the United States (US). Generally, the socio-cultural context in SK, rooted in Confucianism, is traditionally known to be more collectivist, compared to the US, which is known to be diverse and to enable and respect individuality (Hofstede, 1983; Oyserman et al., 2002; Shin, 2012; Triandis et al., 1988). However, recent studies report that Japan and China are changing toward individualism (Hamamura 2012; Hamamura, & Xu, 2015). Within the current trend of valuing individualism, there is a dearth of research investigating how Korean students respond to individualistic approach to learning. This study aims to identify how students in SK compared to those in the US engage with SCL, and how students' characteristics including individualism and autonomous motivation, as well as instructor's support for student autonomy are associated with engagement.

Underlying Theories and Prior Research

Self-Determination Theory

Self-determination theory (SDT) undergirds SCL approaches to support students' engagement in self-authored learning. Here, engagement refers to "the manifestation of students' motivation" (Schunk & Mullen, 2012, p. 220). SDT is a theory of motivation, which argues that humans have an innate desire to be free, socially connected, and competent in what they do (Deci & Ryan, 2000). It states that supporting students' autonomy, relatedness with the instructor, and perceived competence in learning activities can together strengthen academic performance and engagement (Deci & Ryan, 2016). When students are autonomously motivated, they seek mastery and study to learn rather than to acquire rewards and avoid negative consequences (Ryan & Deci, 2000).

With autonomous motivation, the locus of control resides in oneself. However, learning goals, content, pace, schedule, and methods are controlled externally by institutions, curricula, and instructors. Nevertheless, instructors can reframe this reality and help students feel more autonomous by providing a rationale for the work they do, encouraging them to internalize the benefits of learning, using non-controlling language, and providing flexible time to complete assignments (Jang & Reeve, 2004). Especially in assessment-driven academic environments, it is particularly important to support student autonomy so that students perceive that the purpose of learning is not performance but mastery (Deci & Ryan, 2016).

Another important driver of autonomous motivation is a supportive learning climate and a structured guidance. Instructors can treat courses as learning communities, promoting a climate for students to freely express their opinions, ask questions, and pursue individual interests. In this way, students can build relationships with their instructors and peers and strengthen their mastery motivation, behavioral engagement, and performance (Kiefer, Alley, & Ellerbrock, 2015; Ruzek

et al., 2016). Also, autonomy support should be accompanied by structured guidance so that students feel competent (van Loon et al., 2012) and able to exercise their autonomy (Sierens et al., 2009), which leads to greater learning outcomes (Baeten, Dochy, & Struyven, 2013; Su & Reeve, 2011).

Student-Centered Learning

SCL is informed by constructivist epistemologies, which maintain that the goal of learning is to individually generate understanding rather than to regurgitate information received from others (Dewey, 1916; 1938). Students must actively seek resources and process information to make their own meaning as knowledgeable facilitators guide them towards independent functioning (Vygotsky, 1980).

SCL is concerned with both cognitive and non-cognitive aspects of learning, especially students' motivations to assume authority and accountability in their pursuit of self-determined goals. Lee and Hannafin (2016) have emphasized how instructors can support students by: (1) encouraging them to internalize the rationale for the assignment; (2) helping them set personal goals; (3) providing them with choices; (4) offering conceptual, procedural, metacognitive, and strategic scaffolding; and (5) having them make and share artifacts with authentic audiences. Instructors can also learn to relinquish some control and empower students to actively claim their roles. Instructors play a role of coaches who provide structure and support both academically and affectively (Kim, 2012; Reeve, Jang, Carrell, Jeon, & Barch, 2004).

SCL has long been proven useful in learning not only the subject matter but also in students' growth as a creative, responsible, and reflective learner. Betitis and Burke (1978) argued for fostering student's inquiry and problem-solving skills and increased responsibility in learning as well as subject knowledge. In Park's (2010) study, students wrote learning journals in an undergraduate Geography course which resulted in increasing student interest in and engagement with course material and empowering students and be more reflective in their study.

Student-Centered Learning in the United States and South Korea

Individualism and collectivism are regarded as individual's cultural orientation which influences social behavior (Triandis, Botempo, Villareal, Asai, & Lucca, 1988). In individualistic culture, most people's social behaviors are determined by personal goals, attitudes, and values of few very important ingroups (e.g., family), and individuals have freedom to act independently of others (Triandis et al., 1988). In contrast, individuals who have collectivistic orientation consider themselves as part of a community and exhibit stable emotional belonging and loyalty to the community. Per collectivistic orientations, personal goals are subordinate to the communal goal, and conformity to the community are important.

In the US, which can be seen as culturally individualistic (Triandis et al., 1988), attention to student-centered pedagogies has grown (Boud, 1992). Foreshadowing this, Dewey (1916) stressed students' own ability to reconstruct individual experience "which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience" (p.76). Dewey (1938) advocated facilitating opportunities for students to explore issues critically. These approaches have been evident across the US such as discovery learning, problem-and project-based learning, and inquiry-based learning (Kuhn, 2007).

In SK, where socio-cultural contexts are comparatively collectivist, classrooms have been traditionally teacher-driven, and students are rarely involved in autonomous learning activities (Kim, 2018; Huang & Asghar, 2016). Specifically, Korean high school students often work toward societally recognized values such as admission at renowned universities, leaving aside opportunities to pursue personal interests. In 2018, the average Korean high school student spent 13 hours a day studying for the college-entrance exams (8 hours in school and 5 hours in private) (Statistics Korea, 2019). This creates an "education fever" that leaves little room for individual interests, expressions of creativity, and self-authorship (Seth, 2002).

However, SCL is gaining popularity in SK as the value of higher order thinking

skills (i.e., complex problem solving, critical thinking, creativity, and cognitive flexibility) in the modern economy becomes increasingly apparent (Schwab & Samans, 2016; Lee, 2018). Evidence of the effects of SCL on these skills is mounting. With Korean nursing students, student-centered approaches were associated with larger gains in problem-solving and self-directed learning abilities compared to a lecture-based approach (Choi, Lindquist, & Song, 2014). Similarly, postsecondary engineering students were found to use higher-order thinking skills in SCL (Chae & Lee, 2019).

Thus, the Korean Ministry of Education has made efforts to change the rigid school environment by diversifying college admission routes and promoting shifts in curricula to encourage creative, and cross-disciplinary, and vocational education, and adopt SCL strategies in K-12 (Korean Ministry of Education, 2015). A wide spectrum of efforts is made to advocate and practice SCL from elementary to higher education. This is a relatively new development, and steep learning curves have been reported for both students and faculty members (Lee et al., 2019).

Purpose of Study

Few studies examined how Korean students respond to individualistic approach to learning, and other key factors such as autonomous motivation and perceived autonomy support in students' engagement with SCL and compared them in different cultural contexts. This study introduces an SCL assignment in different learning environments and seeks to better understand how autonomy and autonomy support are associated with SCL-engagement. We specify three research questions: How are instructor support, individualism, and autonomous motivation associated with SCL engagement in South Korean courses? (RQ1) How are these same factors associated with SCL engagement in a US course? (RQ2) How do these associations across courses compare descriptively? (RQ3)

Methods

Context and Participants

This study used a convenient sampling. Participants were students from courses at two universities where two faculty members were willing to use Pink Time. One university is a large, public, research-intensive institution in the U.S. and the other is a mid-sized comprehensive private university in SK. The U.S. course was a small (n=28), optional, general education, human geography course. The Korean course was a required, general education, humanities course, which included two larger sections (n=40x2=80). For the both courses, the subject matter is focused on many aspects of "being human."

These two groups of participants shared some similarities. Each were majority female (SK=71%, US=61%) and had a mean age of 20 years. US students were in higher academic years (Avg.=2.5), but in both courses, students' intended or actual majors spanned a wide range of disciplines including fields in the humanities, social sciences, and STEM (Science, Technology, Engineering, and Mathematics).

Procedures

In each country, Pink Time was implemented in the fashion that made sense to its own context, as it is an SCL approach that can be customized to address the contextual uniqueness, and there is no one right way to employ it. Table 1 displays how Pink Time was facilitated in each country.

Table 1. Pink Time activities in South Korea and the US by weeks of semester

Week	South Korea	US
1	Framing - Find yourself by learning something you have always wanted to learn but did not have a chance to Modeling	Daniel Pink Speech Framing - Become the architect of your own learning Modeling
3	Submit Pink Time action plan	First skip day
5	First skip day	Share day, discussion, and self-assessment
6	Follow-up discussion	
9		Second skip day
10	Second skip day - Learn using MOOCs Submit learning report	Share day, discussion, and self-assessment
13		Third skip day
14	Submit final reflection Postsurvey	Share day, discussion, and self-assessment Postsurvey

In the US, the Pink Time assignment involved framing, modeling, practice, reflection, and iteration. To frame the assignment, students were shown a short video about motivation based on Daniel Pink (2009)'s book, *Drive: The Surprising Truth About What Motivates Us*, followed by the description of the assignment. Students were told that three times during the semester they were to "skip class, do anything you want, and grade yourself." This pithy description is meant to get students' attention, but important additional scaffolding is needed to support the assignment. In this case, students were told that their educations are their own, but too often they become followers on their educational pathways rather than leaders. The assignment was an opportunity for students to become the architects of their own learning. They were encouraged to pursue an interest or curiosity and work on it, or learn about it, in a way that made sense to them.

Two weeks before the first "skip" day, the instructor modeled the assignment for the students. He researched an issue and pursued a creative activity, which he then shared with the class. This helped set some general expectations before students

began their first activity. Ultimately, "skip" days provided opportunities for student to practice leading themselves, and were not limited by the subject of the course (i.e., do anything). Each "skip" day was followed by "share" days. Students returned to class to share their activities with each other in small groups and what they thought about the assignment more generally. Also, students completed a self-assessment rubric that included a few short-answer questions (e.g., What challenges did you encounter? What did you learn?) and gave themselves a numerical grade. A key component of Pink Time is iteration (Baird et al., 2020). In the US class, students conducted individual activities, self-reflections, and self-assessments three times. The grades from these assessments comprised 18% of total grade for the course (i.e., 6% each "skip" day).

In SK, Pink Time was structured and framed in more culturally relevant ways. Students were given two class periods to pursue their own interests with the goal of "finding themselves" more deeply. To help scaffold the assignment, students were instructed to plan their "skips days," identifying ahead of time what they wanted to learn and how. Following the first "skip day," students returned to class and shared what they had done. For the second skip day, students were instructed to select a massive open online course (MOOC) on a topic of their choice and attend it for at least three hours and submitted a reflection paper. At the end of the course, students submitted a final reflection paper on what they learned through Pink Time and graded themselves – though these grades were not incorporated in students' final course grades. The instructor assigned grades based on their MOOC and final reflections, in which most students earned a perfect score. In total, Pink Time accounted for 20% of students' final grades.

Instrument

In each course, students completed postsurvey at the end of the semester. The survey instrument collected demographic information (i.e., gender and age) as well as students' responses within several thematic constructs drawn from Self-

Determination Theory, including: (1) an intrinsic motivation inventory (IMI) to assess students' level of engagement with Pink Time, consisting of six subconstructs: effort, enjoyment, value, choice, relatedness, perceived competence ; (2) a relative autonomy index (RAI) to measure whether students' motivation toward the course was more autonomous or controlled (i.e., autonomous motivation); a learning climate questionnaire (LCQ) to indicate students' perceived instructor support (Black & Deci, 2000); and measures of students' individualist orientation (Sharma, 2010). For each construct, students responded to a set of statements according to a 7-point Likert scale. Table 2 provides descriptions of each variable included in our analyses along with means stratified by country.

Analysis

First, we stratified by country and compared mean measures of each variable. Second, we estimated four linear regression models. In each model, student *Engagement* with SCL was the dependent variable, which was extracted from a confirmatory factor analysis of six IMI subconstructs related to effort, enjoyment, value, choice, relatedness, and competence. The eigenvalue of the IMI factor was 4.071, while values of the other subconstructs were below 1. Additionally, the IMI factor accounted for 67.85% of the total variance.

Given the differences in our two study populations and the moderate differences in how SCL was applied in each course context, we estimated a separate model for each country. This decision also follows from our awareness that associations with *Engagement* may vary across contexts for observed or unobserved reasons and our observation that the distributions of students' *Engagement* responses varied across courses.

Each model contained five independent variables, including *Perceived instructor support*, *Individualist*, *Autonomous motivation*, *Age* and *Gender* (Models 1 and 3). We also estimated a second specification of each model, which only included *Perceived instructor*

support, *Individualism*, and *Autonomous motivation* (Models 2 and 4) due to the smaller US sample size. This decision is consistent with recommendations for minimum sample sizes for regression analyses (Gotelli & Ellison, 2004; Jenkins & Quintana-Ascencio, 2020).

Results

Table 2 presents significance tests for variable means stratified by country. Means for *Engagement*, *Perceived instructor support*, *Individualist*, and *Autonomous motivation* were each significantly different in SK and the US. While the US course had higher mean scores for each variable, means in both courses were on the positive end of the Likert scale (including *autonomous motivation*, which had a net positive mean for both courses). Differences in *Age* and *Gender* were not significant.

Table 2. Variable descriptions and stratified means (N=108)

Variable	Description	Means (SD)			
		Full	SK	US	SK vs US
Dependent					
Engagement	Student's engagement with SCL (IMI)	5.49 (0.86)	5.29 (0.90)	6.05 (0.38)	***
Independent					
Perceived instructor Support	Students' perceived instructor's autonomy support (LCQ)	5.51 (0.93)	5.19 (0.83)	6.42 (0.53)	***
Individualist	Students' individualistic orientation	5.19 (0.80)	5.09 (0.84)	5.46 (0.62)	*
Autonomous motivation	Students' autonomous motivation toward the course (RAI)	0.86 (1.27)	0.55 (1.21)	1.76 (0.98)	***
Gender	Gender of student (female=1)	0.69	0.71	0.61	
Age	Age of student	20 (0.89)	20 (0.81)	20 (1.10)	
N	Sample size	108	80	28	

$* p<.05$, $** p<.01$, $*** p<.001$

Table 3 presents the results of the regression models. In our full model from the SK course (1) each of the independent variables is significantly associated with *Engagement*. *Perceived instructor support*, which has the largest effect size, is positively associated with *Engagement*. *Gender*, is also positively associated with *Engagement* indicating higher values for women. *Autonomous motivation* and *Individualist* are also each positively associated with *Engagement*, and *Age* is negatively associated. In our full model of the US course (3), no independent variables are significantly associated with *Engagement*, an outcome likely driven by its small sample size. In the reduced models (2 and 4), *Perceived instructor support* is positive and significant for both courses, while autonomous motivation is positive and significant in the SK course only.

Table 3. Models of SCL Engagement (N=108)

Variable	SK Course (n=80)		US Course (n=28)	
	Model 1 Coef. (SE)	Model 2 Coef. (SE)	Model 3 Coef. (SE)	Model 4 Coef. (SE)
Perceived instr. support	0.42*** (0.11)	0.43*** (0.11)	0.28 (0.14)	0.27* (0.14)
Individualist	0.20* (0.09)	0.17 (0.10)	0.12 (0.12)	0.07 (0.11)
Autonomous motivation	0.24** (0.07)	0.22** (0.08)	0.05 (0.08)	0.04 (0.08)
Gender (female=1)	0.38* (0.17)		0.26 (0.15)	
Age	-0.25* (0.10)		0.00 (0.07)	
Adjusted R-squared	0.43	0.29	0.15	0.14

* p<.05, ** p<.01, *** p<.001

Our results show that both classes reported high levels of *Engagement* with the assignment (see Table 3). First, in the SK course, it is associated with multiple student factors (RQ1). Younger, female, more individualist students engaged higher in SCL. Also, students who were more autonomously motivated in the course reported

higher *Engagement*. Second, despite the small sample size in the US course, we find evidence that instructor support is also a significant and positive driver of engagement (RQ2). Individualism and autonomous motivation, however, are not significantly associated. Importantly, instructor support was significant in both courses (RQ3).

These results suggest that even ambitious SCL assignments like Pink Time can be effective tools to promote course engagement in contexts where students have had comparatively less autonomy, especially when instructors create supportive learning environments. How students perceive their instructors respect and support individual student's interest and personal goals is the universal key to SCL. Also, the benefit of SCL may be greatest earlier in students' educations rather than later.

Discussion

Taken together, the results presented show that students in both courses responded positively to Pink Time despite different levels of autonomous motivation towards the course. In the SK class, this response was most strongly associated with a supportive learning environment and gender, though autonomous motivation, individualism, and age were also important. These observations support our general hypothesis that Pink Time can be effective in learning environments characterized by lower levels of autonomy. In the US class, the small sample size may have obscured significant associations with *Engagement*, but instructor support was also significant in model 4. These broad observations raise several points of discussion.

Teachers play a crucial role facilitating student engagement in SCL regardless of cultural contexts. Our study shows that the broader cultural context may be less important than the narrower classroom context. In both courses, students who perceived instructor support engaged more with Pink Time suggesting that instructors who build trust with their students can help them "buy in" to new

activities (Cavanagh et al., 2016). Notably, we find this outcome in settings with both higher- and lower-levels of course-based autonomous motivation (see Table 2).

Pink Time, like other SCL approaches, was designed to disrupt predominantly top-down, control-based educational cultures (Baird et al., 2015), which can be common in both SK and the US. This finding aligns with those from a recent study of Korean students that a student-centered approach, learner engagement, and the instructor's emotional involvement were critical components of effective instruction (Jung & Cho, 2019). These observations point to a general hypothesis that teachers' adherence to culturally-prescribed norms regarding instructor control is a greater barrier to educational development and innovation (e.g., SCL) than students' adherence to these norms (Liu et al., 2016). Furthermore, our study shows how ambitious SCL activities, like Pink Time, can be effective for students in diverse settings.

Also important in the SK course were gender and age. While this study does not examine the mechanisms that drive the relationship between gender and SCL engagement, our finding that women reported higher measures of engagement in the SK course is consistent with findings elsewhere that women tend to score higher on autonomous motivation (Ratelle et al., 2007, Vallerand et al., 1997) and self-regulated learning (Virtanen & Nevgi, 2010). Research on gender disparities in STEM education may offer direction here. Borrowing insights from Diekman et al. (2017), social norms surrounding gender, combined with institutional-level differences in exposure and encouragement, may foster observed gender differences in attitudes and interest in student-centered learning approaches, as they do in STEM fields.

Last, our finding that younger students in the SK course tended to report higher measures of engagement suggests that the timing of SCL interventions may be important. Transition periods, like the first year of university, can offer important opportunities to signal to students that SCL pedagogies are valid. Conversely, older students who have more exposure with top-down approaches may be more rigid in their perceptions of what "should" happen in university classrooms. However, an

earlier study of community-college students found that younger students (17 to 21) were more rigid than older students (21 to 72) (Vollhardt, 1990). Further research in this area is needed.

Despite findings elsewhere that SCL interventions can be more effective in comparatively individualist cultures than in collectivist ones (Kizilcec & Cohen, 2017), we find evidence of engagement in both contexts. Findings like these, which contrast with those from elsewhere (Darwish & Huber, 2003), should remind teachers that: (1) culture is embedded within context (Osland & Bird, 2000); and (2) students are diverse across multiple axes.

Importantly, differences in students' experiences with Pink Time, while positive in both courses, may be expected and/or associated with limitations of the study itself. As noted above, in the US course, students were more familiar with the instructor, and the instructor was more familiar with the assignment compared to the SK course. Given these factors, lower engagement scores in SK could have been expected. Additionally, a larger sample size in the US course could have identified further significant associations with engagement that align or contrast with findings from the SK course, (e.g., see Table 2, Models 3 and 4).

Implications

The following guidelines can assist instructors in their roles as coaches and facilitators of SCL. First, instructors must encourage students to practice self-authorship and self-reflection by aligning their activities with their identities. Students should reflect on their own interests and skills as they select and conduct their Pink Time activities. Instructors can then use class time to have students reflect on the outcomes of their activities, including the connections between their personal activities, other students' activities, the course material, and learning itself. Self-assessment, including self-grading can be another valuable opportunity for reflection

about student's effort during the process and the quality of the product.

Second, instructors can relinquish some control and trust students to the role of owners of their learning (Cook-Sather, 2002). Students appreciate instructors who respect students as individuals and provide opportunities to explore and extend learning (Cook-Sather & Luz, 2015). With SCL, both the instructor and the students can be uncertain what will happen. In SK especially, students are accustomed to operating within a rigid curriculum of correct answers and memorization and may be uncomfortable with freedom and ambiguity. A program of modeling, planning, practice, and feedback can help build trust so that instructors and students alike can face this uncertainty (Baird, 2021). Lastly, administrators should trust teachers to experiment and innovate in their classrooms (Liu et al., 2016)

Furthermore, student-student interactions are as important as instructor-student interactions. Instructors should provide students with opportunities to discuss their activities with each other in a low-structured environment. Feeling related to classmates can augment engagement in school and learning (Kiefer et al., 2015). While each student pursues her own interest, students can form pairs or groups by topic or activity to check on one another's progress and play a role of peer coaches. This can support the development of diverse learning communities and can even be extended beyond the course (Hung & Yuen, 2010; Strayhorn, 2018).

Future Research and Conclusion

In examining the effect of SCL on students from different educational contexts, this study addresses the relationship between instructors and students, and the learning climate that this relationship develops. Future research should examine how SCL strategies can promote the relationships between students in classroom settings, and the community that can grow from these (Strayhorn, 2018). Research is needed to shed light on what student-to-student factors support autonomous learning

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communities, particularly with students from diverse cultures.

We found that gender and age were important factors for student engagement in SCL in the SK course. The cause of these associations, however, remains unknown and should be investigated. Additionally, internal factors such as students' overall academic achievement and self-regulated learning strategies as well as external factors such as social economic status and home learning environment, and parental involvement may further inform engagement with SCL in cross cultural settings.

SCL is increasingly practiced in all educational settings across cultures – and supporting students' autonomous motivation is key to success in SCL. Pink Time can offer a robust opportunity for students to practice self-authorship and provide instructors with new strategies to promote course engagement. Specifically, instructors can leverage students' activities to highlight connections between their interests, skills, and identities and the content of the course. This study contributes to the scholarly discussion surrounding SCL design and practice with an evidence-based autonomy supportive strategy for diverse cultural contexts.

References

Baeten, M., Dochy, F., & Struyven, K. (2013). The effects of different learning environments on students' motivation for learning and their achievement. *British Journal of Educational Psychology, 83*(3), 484-501.

Baird, T. D. (2021). Applying the Own it, Learn it, Share it framework to the flexible Pink Time assignment to scaffold student autonomy online and in person. *Educational Technolgy Research and Development*, *69*(1), 105-108.

Baird, T. D., Kniola, D. J., Hartter, J., Carlson, K. A., Rogers, S., Russell, D., & Tise, J. C. (2020). Adapting pink time to promote self-regulated learning across course and student types. *International Journal of Teaching and Learning in Higher Education.*

Baird, T. D., Kniola, D. J., Lewis, A. L., & Fowler, S. B. (2015). Pink time: Evidence of self-regulated learning and academic motivation among undergraduate students. *Journal of Geography, 114*, 146-157. doi:10.1080/00221341.2014.977334

Betitis, N. C., & Burke, J. D. (1978). Alternatives to the lecture-discussion method: student-centered approaches to teaching college geography. *Journal of Geography 77.* 35-37.

Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education, 84*, 740-756.

Boud, D. (Ed.). (1988). *Developing student autonomy in learning.* Routledge. Nichols Publishing Company: New York.

Caruso, C. M. (2021). *The Effect of Active Learning on Academic Motivation Among Pre-Service Teachers* (Doctoral dissertation, Virginia Tech).

Cavanagh, A. J., Aragón, O. R., Chen, X., Couch, B. A., Durham, M. F., Bobrownicki, A., Hanauer, D. I., & Graham, M. J. (2016). Student buy-in to active learning in a college science course. *CBE-Life Sciences Education, 15*, 76.

Chae, S. E., & Lee, M. (2019). Student-centered learning and higher-order thinking

skills in engineering students. *The International journal of engineering education, 35*, 617-622.

Choi, E., Lindquist, R., & Song, Y. (2014). Effects of problem-based learning vs. traditional lecture on Korean nursing students' critical thinking, problem-solving, and self-directed learning. *Nurse Education Today, 34*, 52-56.

Cook-Sather, A. (2002). Authorizing students' perspectives: Toward trust, dialogue, and change in education. *Educational Researcher, 31***,** 3-14.

Cook-Sather,, A., & Luz, A. (2015). Greater engagement in and responsibility for learning: what happens when students cross the threshold of student–faculty partnership. *Higher Education Research* & *Development, 34***,** 1097-1109.

Darwish, A.-F. E., & Huber, G. L. (2003). Individualism vs collectivism in different cultures: a cross-cultural study. *Intercultural Education, 14,* 47-56.

Deci, E. L., & Ryan, R. M. (2000). The "What" and "Why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227-268. doi:10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2016). Optimizing students' motivation in the era of testing and pressure: A self-determination theory perspective. In W. C. Liu, J. C. K. Wang & R. M. Ryan. (Eds.), *Building autonomous learners* (pp. 9-29). Singapore: Springer.

Dewey, J. (1916). *Democracy and education*. New York: Macmillan.

Dewey, J. (1938). *Logic: The theory of inquiry*. New York: Holt and Co.

Diekman, A. B., Steinberg, M., Brown, E. R., Belanger, A. L., & Clark, E. K. (2017). A goal congruity model of role entry, engagement, and exit: Understanding communal goal processes in STEM gender gaps. *Personality and Social Psychology Review, 21,* 142-175.

Gotelli N.J., & Ellison, A.M. (2004). *Primer of ecological statistics*. Sunderland: Sinauer Associates: Sunderland, MA. USA.

Hamamura, T. (2012). Are cultures becoming individualistic? A cross-temporal comparison of individualism–collectivism in the United States and Japan.

Personality and social psychology review, 16(1), 3-24.

Hamamura, T., & Xu, Y. (2015). Changes in Chinese culture as examined through changes in personal pronoun usage. *Journal of Cross-Cultural Psychology, 46*(7), 930-941.

Hannafin, M. J., Hill, J. R., Land, S. M., & Lee, E. (2014). Student-centered, open learning environments: Research, theory, and practice. In M. Spector, M. D. Merrill, J. van Merrienboer & M. P. Driscoll (Eds.), *Handbook of research on educational communications and technology* (pp. 641-651). New York: Springer.

Hofstede, G. (1983). The cultural relativity of organizational practices and theories. *Journal of International Business Studies, 14*(2), 75-89.

Hoidn, S. (2017). *Student-centered learning environments in higher education classrooms.* Palgrave Macmillan: New York.

Huang, Y. S., & Asghar, A. (2016). Science education reform in confucian learning cultures: policymakers' perspectives on policy and practice in Taiwan. *Asia-Pacific Science Education, 2*(1), 3.

Hung, H. T., & Yuen, S. C. Y. (2010). Educational use of social networking technology in higher education. *Teaching in Higher Education, 15*, 703-714.

International Society of Technology in Education (ISTE). (2016). ISTE Standards for Students. https://www.iste.org/standards/iste-standards-for-students

Jenkins, D. G., & Quintana-Ascencio, P. F. (2020). A solution to minimum sample size for regressions. *PLOS ONE, 15*(2), 1-15.

Jung, J., & Cho, E. (2019). A study on the conceptual model of effective instruction based on student perspectives at C university. *Korean Education Inquiry, 37*, 155-177.

Kiefer, S. M., Alley, K. M., & Ellerbrock, C. R. (2015). Teacher and peer support for young adolescents' motivation, engagement, and school belonging. *Research in Middle Level Education Online, 38*(8), 1-18.

Kim, C. (2012). The role of affective and motivational factors in designing personalized learning environments. *Educational Technology Research and*

Development, 60, 563-584.

Kim, Y. (2018). Revisiting classroom practices in East Asian Countries: Examination of within-country variations and effects of classroom instruction. *Teachers College Record, 120*(7), 1-42.

Kizilcec, R. F., & Cohen, G. L. (2017). Eight-minute self-regulation intervention raises educational attainment at scale in individualist but not collectivist cultures. *Proceedings of the National Academy of Sciences, 114,* 4348-4353.

Kuhn, D. (2007). Is direct instruction an answer to the right question?. *Educational Psychologist, 42*(2), 109-113.

Lee, E., & Hannafin, M. J. (2016). A design framework for enhancing engagement in student-centered learning: Own it, learn it, and share it. *Educational Technology Research and Development, 64*(4), 707-734. DOI:10.1007/s11423-015-9422-5

Lee, K. B. (2009). Happiness and educational culture in Korea. *Studies on Korean Youth, 20*, 365-392.

Lee, M. K. (2018). Flipped classroom as an alternative future class model?: Implications of South Korea's social experiment. *Educational Technology Research and Development, 66*, 837-857.

Osland, J. S., & Bird, A. (2000). Beyond sophisticated stereotyping: Cultural sensemaking in context. *Academy of Management Perspectives, 14,* 65-77.

Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin, 128*(1), 3.

Park, C. (2010). Engaging students in the learning process: The learning journal. *Journal of Geography in Higher Education, 27*(2), 183-199. https://doi.org/10.1080/03098260305675

Pink, D. H. (2009). *Drive: The surprising truth about what motivates us.* New York, USA: Penguin.

Ratelle, C. F., Guay, F., Vallerand, R. J., Larose, S., & Senécal, C. (2007). Autonomous, controlled, and amotivated types of academic motivation: A person-oriented

analysis. *Journal of Educational Psychology, 99,* 734.

Ruzek, E. A., Hafen, C. A., Allen, J. P., Gregory, A., Mikami, A. Y., & Pianta, R. C. (2016). How teacher emotional support motivates students: The mediating roles of perceived peer relatedness, autonomy support, and competence. *Learning and instruction, 42,* 95-103.

Seth, M. J. (2002). *Education fever: Society, politics, and the pursuit of schooling in SK.* University of Hawaii Press.

Sharma, P. (2010). Measuring personal cultural orientations: Scale development and validation. *Journal of the Academy of Marketing Science, 38,* 787-806.

Sierens, E., Vansteenkiste, M., Goossens, L., Soenens, B., & Dochy, F. (2009). The synergistic relationship of perceived autonomy support and structure in the prediction of self-regulated learning. *The British Journal of Educational Psychology, 79,* 57-68.

Statistics Korea, (2019). Private Education Expenditures Survey of Elementary, Middle and High School Students in 2018. (Released 2019.3.12). http://kostat.go.kr/portal/eng/pressReleases/1/index.board?bmode=read&aSeq=374184

Strayhorn, T. L. (2018). *College students' sense of belonging: A key to educational success for all students.* Chicago: Routledge.

Su, Y. L., & Reeve, J. (2011). A meta-analysis of the effectiveness of intervention programs designed to support autonomy. *Educational Psychology Review, 23,* 159-188.

Triandis, H. C., Bontempo, R., Villareal, M. J., Asai, M., & Lucca, N. (1988). Individualism and collectivism: Cross- cultural perspectives on self-ingroup relationships. *Journal of personality and Social Psychology, 54*(2), 323-338.

Vallerand, R. J., Fortier, M. S., & Guay, F. (1997). Self-determination and persistence in a real-life setting: toward a motivational model of high school dropout. *Journal of Personality and Social psychology, 72,* 1161.

van Loon, A. M., Ros, A., & Martens, R. (2012). Motivated learning with digital

learning tasks: What about autonomy and structure? *Educational Technology Research* & *Development, 60*, 101-1032.

Virtanen, P., & Nevgi, A. (2010). Disciplinary and gender differences among higher education students in self-regulated learning strategies. *Educational psychology, 30,* 323-347.

Vollhardt, L. T. (1990). Rigidity: A comparison by age and gender. *Social Behavior and Personality: an international journal, 18*, 17-26.

Vygotsky, L. S. (1980). *Mind in society: The development of higher psychological processes.* Boston: Harvard university press.

Eunbae LEE

Associate Professor, Catholic College, The Catholic University of
Korea.

Interests: Student-centered learning, autonomy, online learning, school
innovation, social value education

E-mail: elee@catholic.ac.kr

Timothy D. BAIRD

Associate Professor, Department of Geography, College of Natural
Resources & Environment, Virginia Tech.

Interests: human-environment interactions, sustainability, human
ecology, resilience studies, student-centered learning

E-mail: tbaird@vt.edu, Homepage: www.timothydbaird.com