

Effects of Computer-Mediated Communication on Achievement Goals in Athletic Performance

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Abstract

The purpose of this study was to investigate the effects of online ballet community-based teacher-parent computer-mediated communication (CMC) on four achievement goals of ballet students. We used a randomized post-test only control group design. In order to test whether teacher-parent CMC has a positive impact on the improvement of achievement goals, multivariate analysis of covariance were performed with the ages of ballet students as the covariates. Teacher-parent CMC had significant effects on achievement goals. The mastery-approach goals of the experimental group were significantly higher than of the control group. In contrast, the performance-avoidance goals of the experimental group were significantly lower than those of the control group. There were no differences between the two groups in mastery-avoidance and performance-approach goals. Above all, this study is significant because the focus was placed on the inter-relationship between the two settings of school and family in regard to ballet student improvement, rather than on one setting only.

Keywords: computer-mediated communication, achievement goals, ballet education

1. Introduction

Some ballerinas have strength, technique, and artistry but never realize their potential, while others achieve great accomplishments although they seemingly lack ability. This reveals the importance of motivation over natural talent, the latter of which is often regarded as one of the most important elements in ballet. Even though the status of Korean ballet has improved, problems in ballet education persist because ballet education is focused on improving technique rather than motivation. Curricula focused on college admissions are faced with difficulties in developing good ballerinas. The current study suggests ways to improve this weakness by establishing online ballet community-based computer-mediated communication (hereafter, CMC).

Achievement motivation related to ability in ballet is influenced not only by individual factors, but also by family, school, and social environmental factors [1,2]. Family environment is an essential factor that positively or negatively affects children's achievement motivation, especially as parents are the key partners of teachers [3]. Achievement motivation depends on the levels of communication and interaction between mesosystems (parents, teachers and community) in an ecological system [4,5]. For example, in terms of interactions between family and school through various media, both exchange communications about activities, child progress, and suggestions regarding parenting in the ballet learning environment. If teacher-parent communication is more frequent, the achievement motivation of ballet students could be strengthened.

Recently, media have played an important role in creating teacher-parent-student communities in educational practices in the context of changes in family structure [6]. CMC represents a new mode of teacher-parent communication that provides novel opportunities for communication and co-construction of teacher-parent relationships [7]. Parents can provide teachers with information about their children more frequently, while teachers can use the information to better understand student behavior. With more frequent interactions, parental involvement is expected to increase, while teachers can enhance interactions with students [8]. This teacher-parent CMC is strongly related to students ultimately demonstrating their own achievement goals [9].

Effective and highly interactive two-way communication is not always ensured due to trust and understanding issues. Through the consistent sharing of information, teachers and parents develop reciprocal relationships and enhance the understanding of individual goals for each student. Unlike existing one-way web pages, online communities and blogs support online social interaction for better and more active communication between teachers and parents. Furthermore, media features such as photo uploading or commenting are obvious advantages to ballet education.

As female smartphone users increase, applications directed at female users have also increased. The top smartphone applications for working moms are educational applications, and one of every two mothers of preschoolers actually uses new media for education, such as portal sites, IPTV, and smartphone applications [10]. On the other

hand, the internet usage rate of full-time mothers, who are considered to be slow information adopters, has more than doubled from 31.2% in 2001 to 66.5% in 2011. In addition, 66.5% of internet users are social networking service (hereafter, SNS) users (e.g., community, mini homepage, blog, microblog, profile-based services) within the past few years. Of these, 70.8% are in their 30s and 50.8% are in their 40s. The SNS types that full-time mothers mainly use are blogs (82.2%) and communities (73.8%) [11]. Therefore, mothers are likely to accept online ballet communities as a new technology to further their children's education.

There is a governmental plan for supporting ballet academies for young students. The Ministry of Culture, Sports and Tourism established a ballet academy in 2013, as well as an art academy for gifted students in the near future [12]. These schools will consider educational systems that provide academic support for ballet students. School administrators should be aware of the critical importance of achievement goals that relate directly to student achievements. Because teacher-parent CMC contributes to the improvement of teacher-parent partnership, it also has an impact on the success of ballet students.

2. Literature Review

Ecological theory explains student development through reciprocal influences from school, family and community. The mesosystem provides a conceptual framework for analyzing the influences of bidirectional relationships between school and family in terms of child development. For example, school experiences can affect the behavior of a child and a parent at home, while the family also influences the student's performance at school. Although the positive influences of school-family interactions on student performance and behavior at school have been discussed in the academic literature, most researchers have not fully considered the joint impact of school and family processes on child development [4].

The current study focuses on the reciprocal relationship between school and family, rather than on properties or practices at a single level (school or family). Teacher-parent partnership has been identified as important in student success [5]. Many researchers have used Epstein's framework [5] of six types of parental involvement that schools can use to promote partnerships with parents. However, several researchers have suggested that each type of parental involvement has different or even opposite effects on different factors of student achievement motivations [13,14].

Although some researchers have insisted that parents can be overly involved with their children's education [15], many researchers have considered communication as a means for forming teacher-parent partnerships, on the grounds that communication has a positive effect on student academic achievement motivation and actual achievement [5,16,17]. Shirvani [16] reported that teacher attempts to communicate with parents (e.g., by providing monitoring sheets with information on homework, conduct, and class participation) had significant effects on students' homework assignments, confidence in their math abilities, engagement, and attitudes in the classroom. More recently,

researchers such as Hoover-Dempsey and Walker [18] noted the importance of bidirectional communication between teachers and parents over the importance of conveying messages. For example, it is crucial to student achievement to exchange information and ideas between teachers and parents about student progress, needs, and learning. After sharing this information, teachers and parents better understand their students and enhance interactions with students [8]. Grolnick and Slowiaczek [13] found that parental involvement (i.e., behavioral, cognitive, and personal) was associated with motivational factors and school performance among 11- to 14-year-old students. In their study, students achieved competence and control in schooling when their mothers participated more in their activities (e.g., attending teacher-parent conferences and school activities). In turn, these motivational factors predicted school performance.

CMC has been identified as an important communication modality in educational practice. Researchers have suggested that CMC can help develop interpersonal relationships in part due to its ability to provide ongoing connections [7]. The more often teachers and parents communicate about children through CMC, the greater the teachers' understanding of students and parental involvement. Furthermore, video technology is attractive for use in ballet education because picture and video functions can be easily implemented, and are currently underutilized teaching practices. Alberto and colleagues [19] utilized videotapes to communicate with parents and monitor the progress of students with severe disabilities. Parents reported that videotapes increased communication with teachers and enhanced the understanding of their children's school programs. Clevenson [20] reported that videos had a significant effect on middle school success by increasing the number of completed science projects. Although researchers have consistently proposed the positive effects of teacher-parent CMC on student achievement motivation, little empirical research on teacher-parent CMC has been conducted.

With achievement goals as the most important framework for understanding achievement motivation, in the current study we sought to investigate the impact of teacher-parent CMC. We analyzed how CMC changed four achievement goals of ballet students. In previous studies, mastery-approach goals were found to have positive relationships with learning [21], whereas mastery-avoidance goals and performance-avoidance goals have consistently shown negative relationships with learning [22,23]. Meanwhile, although the role of performance-approach goals in learning situations is disputed, they are reported to serve an adaptive role in competitive conditions [24].

Gonzalez et al. [25] showed that maternal involvement (e.g., remaining informed regarding how a student is doing in school) was positively associated with the adoption of mastery goals among 15-year-olds, whereas a high level of maternal control (autocratic style) led to the pursuit of performance goals. Similarly, Duchensne and Ratelle [26] showed that parental involvement had longitudinal effects on the mastery goals of grade 6 students, whereas parental control (authoritarian style) was associated with the endorsement of performance goals. Gurland and Grolnick [27] showed that maternal control was positively associated with the endorsement of performance goals among

elementary school students. More recently, Regner, Loose and Dumas [28] examined whether students' perceptions of parent and teacher academic involvement contributed to the accomplishment of four achievement goals. They found that 13- to 15-year-old student perceptions of parental academic monitoring were positively related to both mastery goals and the performance goals.

Overall, these results not only demonstrate the importance of parent involvement in student goal orientation in the classroom, but also show that more studies are needed to clearly delineate the contributions of parental involvement to different goal orientations. The focus of the current study was on the CMC between teachers and parents as a means of teacher-parent partnership in ballet education. The purpose of this study was to examine, (a) whether teacher-parent CMC is positively related to both mastery-approach and performance-approach goals, and (b) whether teacher-parent CMC is negatively related to both mastery-avoidance and performance-avoidance goals.

2.1 Reserch Hypotheses

Based on previous studies, in this study we sought to examine the effects of an online ballet community-based teacher-parent CMC on the achievement goals of ballet students. Our hypotheses relating to the above theoretical framework are:

H1: The experimental group in the teacher-parent CMC will be more likely to improve mastery-approach goals than the control group.

H2: The experimental group in the teacher-parent CMC will be more likely to decrease mastery-avoidance goals than the control group.

H3: The experimental group in the teacher-parent CMC will be more likely to improve performance-approach goals than the control group.

H4: The experimental group in the teacher-parent CMC will be more likely to decrease performance-avoidance goals than the control group.

Table 1. Definitions of Terms [29]

Variable	Definition
Mastery-approach Goals	"Students demonstrate an approach orientation toward success by striving to master the new materials, while focusing on individual progress to assess the quality of their performance"
Mastery-avoidance Goals	"Students define incompetence as not performing as well as before or the best they could and try to circumvent failure by avoiding such possibilities"
Performance-approach Goals	"Students demonstrate an approach orientation to success but nonetheless gauge their competence by relative superiority of their performance to that of their peers"
Performance-avoidance Goals	"Students demonstrate an avoidance orientation and try to escape failure by concealing their relative incompetence in front of others"

3. Methods

3.1 Sample

The participants in this study were children who received ballet training in similar environments, and their mothers. Participants were randomly assigned to the experimental group (n=34) and control group (n=45). The students were upper elementary school and middle school students. In the experimental group, 32.4% (n=11) of the ballet students were aged 10 to 11 and 67.6% (n=23) of the ballet students were aged 12 to 14. In the control group, 15.6% (n=7) of the ballet students were aged 10 to 11 years and 84.4% (n=38) were aged 12 to 14 years. In the experimental group, 29.4% (n=10) of the mothers were younger than 40, 61.8% (n=21) were in their 40s, and 8.8% (n=3) were in their 50s or older. Mothers in the experimental group joined an online ballet community that was formed for the purpose of this study only. Further, only mothers were accepted as members of the online ballet community to avoid problems such as mothers and children not sharing information if they were both accepted as members of the online ballet community. We wanted to create an online ballet community in which mothers and children could share and enjoy content (such as photos of ballet students) together. The online ballet community used a social network service, Facebook, that is accessible by PCs, smartphones, and tablet PCs. Hence, mothers were able to obtain real-time feedback without time or location constraints while participating in this experiment.

3.2 Measures

The achievement goal questionnaire used in this study consists of four factors (i.e., mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance) adopted from studies by You and Back [30] and Lee and Kim [31], and contained modified wording for students majoring in ballet. Mastery-approach goals were assessed with six questions, mastery-avoidance goals with four questions, performance-approach goals with five questions, and performance-avoidance goals with three questions. The list of items is presented in [Table 2](#). Each item was rated on a 5-point Likert scale ranging from 1 (not at all true) to 5 (very true).

3.3 Statistical Analysis

To investigate the impact of the teacher-parent CMC on achievement goals, a randomized post-test only control group design was adopted. In cases where there are more than two dependent variables, we used a multivariate approach to control for Type I error. Furthermore, if there were also significant factors on dependent variables, we used multivariate analysis of covariance (MANCOVA) to compare vectors of adjusted means [32]. Thus, in order to test whether teacher-parent CMC has a positive impact on the

improvement of four achievement goals among ballet students, MANCOVA was performed with the age of ballet students as the covariate.

Table 2. List of Scale Items

Construct	Scale Items
Mastery-approach Goals	It is important for me to learn new ballet techniques
	It is important for me to improve my ballet techniques
	I try hard to learn all unknown ballet techniques
	I like going through the process of learning new techniques
	I like devoting more time to practicing difficult ballet techniques
	It is important for me to completely master all of the techniques
Mastery-avoidance Goals	I worry that I may not able to perform all of the techniques
	I worry that I may perform poorly even with hard work
	I worry that I may not learn all of the needed techniques
	I worry that I may not completely master all of the techniques
Performance-approach Goals	My goal for a ballet class is to get better grades than other students
	I like to stand out among other students
	It is important for me to perform techniques better than other students
	It is important to me to perform better than other students
	I like getting attention in ballet class.
Performance-avoidance Goals	I do not like to practice in the front of class
	I like to practice quietly in the back
	I do not like to perform poorly compared to other students

4. Results

4.1 Reliability and Validity

The reliability coefficients using Cronbach's alpha coefficients for the four achievement goal dimensions of mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance goals were 0.825, 0.931, 0.819, 0.716, respectively. The four-factor achievement goals based on the 2x2 framework were found to be a satisfactory approximation of the ballet student data. The calculated value of each measure was 0.904 for Tucker-Lewis index (TLI) and 0.077 for root mean square error of approximation (RMSEA). Thus, the confirmatory factor analysis (CFA) of the four-factor structure based on the 2x2 achievement goal framework confirmed our model.

4.2 Correlation

Mastery-approach ($r = 0.32$) and mastery-avoidance goals ($r = 0.35$) have positive relationships with performance-approach goals. While performance-avoidance goals

were positively correlated with mastery-avoidance goals ($r = 0.22$), they were negatively correlated with mastery-approach goals ($r = -0.27$). There were no correlations between performance-approach and performance-avoidance goals or between mastery-approach and mastery-avoidance goals (see [Table 3](#)).

Table 3. Correlation Matrix of Achievement Goal Variables

	MAP Goals	MAV Goals	PAP Goals	PAV Goals
Mastery-approach Goals	1			
Mastery-avoidance Goals	0.122	1		
Performance-approach Goals	0.317**	0.352**	1	
Performance-avoidance Goals	-0.269**	0.221*	0.095	1
Age	-0.253*	0.110	-0.206	-0.061

* $p < 0.05$, ** $p < 0.01$

4.3 Effect of Teacher-Parent CMC on Achievement Goals

In order to assess whether teacher-parent CMC had positive impacts on changes in the achievement goals of ballet students, we conducted MANCOVA with the post-test scores of the achievement goals of ballet students. Prior to this study, we conducted multivariate analysis of variance (MANOVA) on the four achievement goals with different ballet academy groups of students, and also with different age groups of students.

Table 4. MANOVA Results

Effect	Pillai's Trace	<i>F</i>	<i>df</i>	<i>Sig.</i>	η^2
Academy	0.947	1.033	(4, 74)	0.396	0.053

[Table 4.](#) shows the results of MANOVA on the four achievement goals for the two academy groups. The results indicated that there is no significant difference between the groups; the value of Wilks' Lambda indicates that only about 5.3% of the variance of the dependent variables is accounted for by the differences between the groups.

Table 5. MANOVA Results

Effect	Pillai's Trace	<i>F</i>	<i>df</i>	<i>Sig.</i>	η^2
Student's Age	0.145	3.137	(4, 74)	0.019	0.145

Table 6. ANOVA Results for Age Groups

DV	Group		F	η^2
	ESS Mean(SD)	MSS Mean(SD)		
Mastery-approach Goals2	4.593 (0.309)	> 4.306 (0.501)	5.267*	.62
Mastery-avoidance Goals2	3.208 (1.240)	3.500 (1.079)	0.948	
Performance-approach Goals2	3.900 (0.827)	3.528 (0.730)	3.397	
Performance-avoidance Goals2	2.241 (0.757)	2.120 (0.856)	0.289	

* p<0.05

Note. ESS= Elementary School Students; MSS= Middle School Students

Statistically significant differences existed among age groups (see [Table 5](#)). Tests of between-subjects effects detected significant age-related differences for mastery-approach goals. The mean score of elementary school students ($M = 4.593$) was significantly higher than that of middle school students ($M = 4.306$). However, student age had no effects on mastery-avoidance, performance-approach, or performance-avoidance goals (see [Table 6](#)).

Significant differences were detected among age groups only. Thus, the covariate consisted of student age and was found to be significant for the achievement goals of ballet students. The results of MANCOVA for the experimental group and control group using Wilks' lambda showed that there were significant differences between the two groups when comparing vectors of adjusted means; $F(4, 73) = 3.953, p = 0.006, \eta^2 = 0.18$ (see [Table 7](#)). Univariate analyses of variance of each of the four dimensions of achievement goals indicated significant effects for mastery-approach goals ($F = 6.954, p = 0.010, \eta^2 = 0.08$) and performance-avoidance goals ($F = 8.509, p = 0.005, \eta^2 = 0.10$). In terms of mastery-approach goals, the mean score of the experimental group ($M = 4.539$) was significantly higher than that of the control group ($M = 4.244$). In contrast, the mean performance-avoidance goals score of the experimental group ($M = 1.863$) was significantly lower than that of the control group ($M = 2.363$). However, teacher-parent communication had no effect on mastery-avoidance and performance-approach goals (see [Table 8](#)).

Table 7. MANCOVA for Achievement Goals

Effects	Λ	F	df	Sig.	η^2
Age	0.910	1.797	(4,73)	0.139	0.09
Teacher-Parent CMC	0.822	3.953	(4,73)	0.006	0.18

Table 8. ANOVA for Teacher-Parent CMC

DV	Group		F	η^2
	Experiemntal group Mean (SD)	Control group Mean (SD)		
MAP Goals2	4.539 (0.392)	4.244 (0.502)	6.954	0.08
MAV Goals2	3.162 (1.182)	3.639 (1.030)	3.455	
PAP Goals2	3.765 (0.910)	3.604 (0.710)	0.001	
PAV Goals2	1.863 (0.766)	2.363 (0.822)	8.509	0.10

5. Discussion

In this study, we investigated how CMC between teachers and parents through a web-based online ballet community affects the achievement goals of ballet students. Despite the fact that the teacher-parent communication environment was provided in the context of a new medium, teacher-parent CMC brought about positive changes to the achievement goals of ballet students.

When changes in the achievement goals of ballet students were analyzed after teacher-parent CMC was initiated in the context of an online ballet community, positive results were observed for the overall experimental group. Specifically, students whose mothers participated in the teacher-parent CMC showed higher mastery-approach goals compared to the control group. This was considered an improvement in mastery-approach goals because it focused on developing student competence or on the attainment of task-mastery.

Our study provides important information regarding the positive effects of teacher-parent CMC on mastery-approach goals. These results are quite similar to previous findings that teacher-parent interactions had positive relationships with student achievement motivation or engagement [3,25,26]. In particular, our results are identical to those of recent research revealing that parental involvement or maternal involvement leads to the identification of student mastery-goals [25]. This implies the need to consider the function of both text and images in online ballet communities. For example, previously in ballet community, teachers and parents conducted communications that included pictures of warm learning manners (e.g., ballet programs, ballet pictures, comments on children, and helping children at home) and text-based CMC, neither of which stressed achievement or compared students with each other, as ballet students must compete during their elementary years in order to enter arts-focused middle or high schools.

There have been many studies dealing with the relationship between parental involvement and student achievement, but it is difficult compare their results. Parental involvement is an important factor in the educational outcomes of children, but has different effects on achievement motivation according to how it is implemented [3]. In this context, researchers have suggested the necessity for a multidimensional approach

regarding parental involvement, emphasizing communication content as the key to school-home communications [3,14]. For example, parents have communications with teachers that vary in method and content. Communication regarding school problems had negative effects on student motivation, but communication concerning other more benign school issues had positive effects [3].

The online ballet community allowed participants to post photos or videos as well as text-based CMC. Hence, when communicating with parents regarding their children, it was possible for teachers to effectively communicate their understanding of the ballet education of each child by showing parents photos and videos of ballet performances. The photos could also be freely embellished to provide better images of students or of their development. It is anticipated that parent reactions after communicating with teachers in an online ballet community might result in encouraging mastery-approach goals of their children. Fan and Williams [3] found that communication with teachers in an academic environment regarding benign school matters had a positive effect on students' academic self-efficacy, engagement, and intrinsic motivation in math and English, and this phenomenon was explained by parental reactions and behaviors in response to the communication with the teacher. Hence, the technical elements utilized in the online ballet community are important, and online communication is more effective for encouraging positive achievement goals of ballet students compared to teacher-parent communication through other media (e.g., phone calls, text messages).

Students whose mothers had participated in teacher-parent CMC based on the online ballet community showed lower performance-avoidance goals compared to the control group. The influence of teacher-parent interaction through the online ballet community might be extended to the home, resulting in the experimental group displaying lower performance-avoidance goals, which in turn generally had negative correlations with academic achievement [33]. Students show a tendency to accept individual achievement goals that correspond to their own perceived goal structure. Within the online ballet community in this study, mastery-approach goal-oriented communications were conducted. These communications might be extended to parental behavior at home, which led the students to strongly pursue a mastery-approach goal structure. This explains the decrease of performance-avoidance goals, which showed a negative correlation with mastery-approach goals.

When previous studies are examined, the warm, available, and supportive involvement of parents and the children's perception of their parents' mastery-approach goals are found to decrease negative emotions in children (e.g., anxiety, shame). Increased teacher-parent communication can heighten student achievement and reduce negative behaviors. The results of one form of teacher communication, in which reports of students' school life were sent to their parents twice a week, showed that children submitted their homework more frequently and that negative behaviors were reduced [16]. In the light of such previous research, if teacher-parent communication leads to positive parent involvement, not only positive achievement goals, but also a reduction of negative elements can be expected as a result.

On the other hand, the mean score for mastery-avoidance goals was lower in the experimental group than in the control group, although the difference was not statistically significant. Such results typically appear in perfectionists or individuals who engage in a field of specialization [21]. Mastery-avoidance goals are related to the fear of failure and can work as a predictor of exam anxiety for individual ballet students [21]. As noted above, there were no significant effects although the mean score for mastery-avoidance goals was lower in the experimental group than in the control group. In order to encourage positive achievement goals as a result of teacher-parent interaction in an online ballet community, the teacher-parent interactions should be multidimensional [5]. Ecological systems also emphasize how family, school, and community can contribute to the development of students. The strategy of parental involvement through successful teacher-parent CMC is, after all, related to requirements satisfying the ecological system.

Performance-approach goals, which showed a strong correlation with mastery-approach goals, did not have any significant effects on teacher-parent communication in the online ballet community. Positive and negative views coexisted regarding the performance-approach goals, but positive relationships through teacher-parent communication were hypothesized on the basis of previous research, which suggested that positive effects would be observed in specific situations such as competitions. However, we found that the relationship was not significant. This result does not mean that teacher-parent communication had absolutely no influence on performance-approach goals. As in the argument described above regarding performance-avoidance goals, students' perceptions of the goal structure of teacher-parent communication affect their achievement goal orientations. Students express stronger mastery goals in an environment that emphasizes a mastery goal structure, and performance goals in an environment that emphasizes performance goals [34]. Previous research found that students who graduated from elementary school with a strong mastery goal structure and entered middle school with a stronger performance goal structure, experienced corresponding changes [35]. Mastery-approach goal-oriented teacher-parent communication conducted within an online ballet community can be seen as an encouragement of the mastery-approach goals of students, and may have relatively little effect on performance-approach goals.

6. Conclusions

Our results suggest that teacher-parent CMC based on an online ballet community has an impact on the formation of positive achievement goals among ballet students. This study is significant in that it highlights the benefits of CMC between teachers and parents and its effects on ballet education. Specifically, an experimental group that participated in teacher-parent CMC achieved higher mastery-approach goals and lower performance-avoidance goals than the control group. According to the four-factor goals theory, we suggest that mastery-approach goals played the most positive role. As such, we confirmed that teacher-parent CMC based on an online ballet community contributed to the formation of achievement goals for students in ballet education. Above all, our

findings are significant because we focused on the inter-relationship between the two settings of school and family and not just on one setting (school-children or family-children). Our study also outlines important implications for teachers and parents regarding how to effectively support their children and how to be full partners in ballet education. In order to develop more effective teacher-parent partnership, it is necessary to specifically examine how teacher-parent CMC affects them and how this in turn positively influences ballet students. The result of dyadic data analysis may clearly delineate reciprocal relationships among school-family-children in ballet education.

References

- [1] F. Gagnè, *Understanding the complex choreography of talent development through DMGT-based analysis*, In K. Heller, F. Mönks, R. Sternberg, and R. Subotnik (Eds.), *International Handbook of Giftedness and Talent* (pp. 67-79). Oxford, UK: Pergamon Press, 2000. [Article \(CrossRef Link\)](#)
- [2] J. Van Tassel-Baska, *Domain-specific giftedness: applications in school and life of chapter 20*, In R. Sternberg, and J. Davidson (Eds.), *Conceptions of giftedness* (pp.358-376). New York, NY: Cambridge University Press, 2005. [Article \(CrossRef Link\)](#)
- [3] W. Fan and Williams, C.M. "The effect of parental involvement on students' academic self-efficacy, engagement and intrinsic motivation," *Educational Psychology*, vol. 30, no.1, pp. 53-74, 2010. [Article \(CrossRef Link\)](#)
- [4] U. Bronfenbrenner, "The ecology of human development: Experiments by nature and design," Cambridge, MA: Harvard University Press, 1979. [Article \(CrossRef Link\)](#)
- [7] J. Walther, "Computer-mediated communication impersonal, interpersonal, and hyperpersonal interaction," *Communication Research*, vol. 23, no.1, pp. 3-43, 1996. [Article \(CrossRef Link\)](#)
- [8] R. Powell and J. Stremmel, "Managing relations with parents: Research notes on the teacher's role," *Advances in Applied Developmental Psychology*, vol. 2, pp. 115-127, 1987. [Article \(CrossRef Link\)](#)
- [9] B. Thompson, "Characteristics of parent-teacher e-mail communication," *Communication Education*, Vol. 57, no.2, pp. 201-223, 2008. [Article \(CrossRef Link\)](#)
- [10] K. D. Lee, *The Financial News*. Retrieved from <http://www.fnnews.com>, June 11, 2012.
- [11] Korea internet security & agency. *2011 Survey on the internet usage*, 2012.
- [12] The Ministry of culture, sports and tourism. *Strategy for the Advancement of K-Arts on the Global Stage*, 2012.
- [13] W. Grolnick and M. Slowiaczek, "Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model," *Child Development*, vol. 65, no.1, pp.237-252, 1994. [Article \(CrossRef Link\)](#)
- [14] C. Izzo, R. Weissberg, W. Kasprow, and M. Fendrich, "A longitudinal assessment of teacher perceptions of parent involvement in children's education and school performance," *American Journal of Community Psychology*, vol. 27, no.6, pp. 817-839, 1999. [Article \(CrossRef Link\)](#)
- [15] R. Lewis, "Using communications technology and parental involvement to improve homework completion and quality," *Action Research Exchange*, vol. 2, no.1, 2003. [Article \(CrossRef Link\)](#)
- [21] A. Elliot and H. McGregor, "A 2x2 achievement goal framework," *Journal of Personality and Social Psychology*, vol. 80, no.3, pp.501-519, 2001. [Article \(CrossRef Link\)](#)

- [22] B. G. Bak, I. S. Park, and Y. L. Go, "Development of AGO(Achievement Goal Orientation) program and testing its effects," *The Korean Journal of Educational Psychology*, vol. 23, no.3, pp.521-541, 2009. [Article \(CrossRef Link\)](#)
- [23] S. K. Son and S. S Do, "Mediating effect of achievement emotions in the relation between perceived parents and teachers' achievement goal orientations and self-regulated learning," *The Korean Journal of Educational Psychology*, vol. 26, no.2, pp.479-504, 2012. [Article \(CrossRef Link\)](#)
- [24] C. Midgley, A. Kaplan, and M. Middleton, "Performance-approach goals: Good for what, for whom, under what circumstances, and at what cost?," *Journal of Educational Psychology*, vol. 93, no.1, pp.77-86, 2001. [Article \(CrossRef Link\)](#)
- [25] A. Gonzalez, M. Doan Holbein, and S. Quilter, "High school students' goal orientations and their relationship to perceived parenting styles," *Contemporary Educational Psychology*, vol. 27, no.3, pp.450-470, 2002. [Article \(CrossRef Link\)](#)
- [26] S. Duchesne and C. Ratelle, "Parental behaviors and adolescents' achievement goals at the beginning of middle school: Emotional problems as potential mediators," *Journal of Educational Psychology*, vol. 102, no.2, pp.497-507, 2010. [Article \(CrossRef Link\)](#)
- [27] S. Gurland and W. Grolnick, "Perceived threat, controlling parenting, and children's achievement orientations," *Motivation and Emotion*, vol. 29, no.2, pp.103-121, 2005. [Article \(CrossRef Link\)](#)
- [28] I. Regner, F. Loose, and F. Dumas, "Students' perceptions of parental and teacher academic involvement: Consequences on achievement goals," *European Journal of Psychology of Education*, vol. 24, no.2, pp.263-277, 2009. [Article \(CrossRef Link\)](#)
- [29] M. Bong, "Age-related differences in achievement goals differentiation," *Journal of Educational Psychology*, vol. 101, no.4, pp.879-896, 2009. [Article \(CrossRef Link\)](#)
- [30] J. Yoo and M. K. Back, ""The Validation of the 2x2 Achievement Goal Scale in Dance," *The Korean Journal of Dance*, vol. 63, pp.133-148, 2010. [Article \(CrossRef Link\)](#)
- [31] J. H. Lee and A. Y. Kim, "Development of an academic achievement goal orientation scale," *Korean Journal of Educational Psychology*, vol. 19, no.1, pp.311-325, 2005. [Article \(CrossRef Link\)](#)
- [32] L. Grimm and P. Yarnold. "Reading and understanding more multivariate statistics," *American Psychological Association (APA)*, 2002.
- [33] A. Elliot, H. McGregor, and S. Gable, "Achievement goals, study strategies, and exam performance: A mediational analysis," *Journal of Educational Psychology*, vol. 91, no.3, pp.549-563, 1999. [Article \(CrossRef Link\)](#)
- [34] M. Church, A. Elliot, and S. Gable, "Perceptions of classroom environment, achievement goals, and achievement outcomes," *Journal of Educational Psychology*, vol. 93, no.1, pp.43-54, 2001. [Article \(CrossRef Link\)](#)



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