



Research Article

Using the TASC Model to Develop Gifted Students' Creativity: Analytical Review

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Abstract

The purpose of this analytical review was to investigate the uses of the TASC model to teach gifted students and develop their creativity. The researcher decided to select studies of the TASC model, which were not used by Maker, Alhusaini, Zimmerman, Pease, Schiever, and Whitford (2014) in the Saudi project. The studies included 30 out of 367 studies that were chosen for the Saudi project. Out of the 30 studies, the researcher selected 15, which he identified as school-based projects in which the TASC model was specifically used or described in teaching. The researcher also added six books that were written by Belle Wallace and colleagues. All of the reviewed publications suggested that the TASC model has been an effective, useful, and practical method with all students from different grade levels and of different abilities (especially with those who were gifted), as well as in all different content areas, to teach students and develop their creativity. The researcher identified limitations across the reviewed studies and publications, such as omissions of data collection procedures, data analysis processes, and lack of information about the participants as well as the interventions. Also, most of the studies provided qualitative results with no further discussion or explanation. More high quality research is needed to improve the scholarly conversation around this model.

Keywords

TASC model, teaching gifted students, creative problem solving, developing creativity

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Introduction

Research in the field of giftedness has supported the idea that good curriculum and instruction for gifted students should be challenging. Researchers have suggested methods for challenging gifted students, such as use of advanced materials and objectives (Foust, Hertberg-Davis, & Callahan, 2008); expectation of idea generation and creativity (Hunsaker, 2005; McAllister & Plourde, 2008); application of advanced criteria for success (Gross & van, 2005); complexity of ideas (Coleman, 2014; Koichu & Berman, 2005); a variety of approaches to learning and expressing learning (Cheng, Lam, & Chan, 2008; Mioduser & Betzer, 2008); open-endedness (Treffinger & Isaksen, 2005); multifaceted-ness of tasks (Housand & Reis, 2008; Volk, 2006); expectation of transformation of information and ideas (Hill, 2013; Morisano & Shore, 2010); depth and complexity of studies (VanTassel-Baska, 2005; Williams, 2005); a focus on ethical dilemmas and currently unsolved problems in a field of study (Rooks & Maker, 2009; VanTassel-Baska, 2008); use of multiple abstractions (McAllister & Plourde, 2008; VanTassel-Baska & Wood, 2010); reconciling divergent points of view on topics and issues (Daniel, 2007; Treffinger & Isaksen, 2005); and developing advanced skills in self-direction (Maker & Schiever, 2010; Tomlinson, 2005). However, the task for teachers and practitioners to find a teaching model involving all or most of these suggestions has seemed onerous (Maker, Alhusaini, Zimmerman, Pease, Schiever, & Whitford, 2014).

Researchers who have examined teaching in the field of giftedness have been highly influenced by the Creative Problem Solving (CPS) model. Although the CPS model was originally developed for the field of business by Osborn and Parnes in 1963, Treffinger and colleagues have published research and programs about the CPS model to facilitate its uses in the fields of creativity, education, business, and psychology (See Isaksen & Treffinger, 2005). Maker and Schiever (2005) described the six steps of the CPS process as the following: (a) Objective (Mess) Finding, which included identifying the goal, challenge, and future direction; (b) Fact Finding, which included collecting data about the problem and observing the problem as objectively as possible; (c) Problem Solving, which involved examining the various parts of the problem to isolate the major part and stating the problem in an open-ended way; (d) Idea Finding, which comprised generating as many ideas as possible regarding the problem and brainstorming; (e) Solution Finding, which included choosing the most appropriate solution and developing and selecting criteria to evaluate alternative solutions; and (f) Acceptance Finding, which involved creating a plan of action. Researchers in the field of giftedness have thus recognized the necessity of teaching gifted students to internalize the process of creative problem solving as a real-life skill.

Thinking Actively in a Social Context (TASC) Model

Although the CPS model has been used successfully in education, researchers in the field of giftedness have adapted its main idea (i.e., process) to develop new educational models. For example, Torrance in 1974 developed the Future Problem Solving (FPS) using a process of six steps (See Treffinger, Jackson, & Jensen, 1996): (a) Finding Problems, (b) Selecting an Underlying Problem, (c) Identifying Solutions, (d) Generating and Selecting Criteria, (e) Applying Criteria to Solutions, and (f) Creating an Action Plan. In the past decades, educators have also enhanced the concept and practice of problem solving. For instance, Jackson (1975) stated that, “*Problem = Objective + Obstacle*” (See Adams & Wallace, 1991, p. 107). Adeyemi (2008) elaborated Jackson’s conceptual equation by stating, “*problem solving involves taking a series of actions in the process of an investigation that seeks to bridge the gap between a problem state and the anticipated goal*” (p. 698). Adams and Wallace (1991) mentioned that they developed the Thinking Actively in a Social Context (TASC) model as a process based on Jackson’s idea. Therefore, their first version of the TASC model included only five steps, which were: Identify (i.e., what is the problem?), Generate (i.e., think of as many ideas as possible), Decide (i.e., which is the best one?), Implement (i.e., do or make?), and Evaluate (i.e., how well did we do? how can we do better?) (See Adams & Wallace, 1991).

Development of the TASC Model

Framework. Wallace (2008) emphasized that, in conjunction to Jackson’s ideas, her development of the TASC model was driven by Paolo Freire’s (1998) philosophy of meeting the needs of learners within their particular and immediate contexts. She also recognized the work of Vygotsky’s (1978) social and cultural transmission and construction of knowledge. Finally, Wallace was influenced by Sternberg’s (1985, 1997, 2001) ideas on metacognition, especially the processes that are used to plan, monitor, and evaluate strategies.

Using the TASC model for the development of thinking and problem solving, the students were led through a process of eight steps in which they (a) gathered and organized information about the problem, both what they already knew and what they wanted to find out; (b) clearly defined the problem they would solve; (c) generated as many ideas as possible for solving the problem; (d) evaluated the ideas and selected the ideas or combination of ideas that they thought were best by developing and applying clear criteria; (e) implemented the solution or plan they chose as the best; (f) evaluated the quality of their implementation of the solution or plan; (g) communicated their solution to others; and (h) reflected on what they learned about themselves (See Wallace, 2001; Wallace, 2002; Wallace, Cave, & Berry, 2009).

The TASC model is shown as a wheel (Figure 1) to indicate that although the steps generally are followed in a sequential way, students often return to earlier steps when they find a need to do so to be more effective in their problem solving. At step one, students gather and organize the information they have about the task or the problem situation. At the second step, they define the problem or clarify the task. Next, they generate many different ways to solve the problem or do the task. After they have developed different ideas, the students develop criteria for evaluating the ideas to decide which ones to use. Then, after deciding which idea or ideas, they implement their solution or conduct their task. Next, they evaluate the idea again and share the results with others. Finally, they use their metacognitive skills to review what they have done well, what they need to improve, and what they learned; they take time to think about how to solve a similar problem better in the future (See Wallace, 2003; Wallace, Maker, Cave, & Chandler, 2004).



Figure 1.

Thinking Actively in a Social Context

Goals. Adams and Wallace (1991) listed the most important goals of using the TASC model as:

“(a) improve attitudes to [ward] school and motivation for learning; (b) improve scholars’ self-concepts; (c) help scholars to tackle for themselves problems at home, at school or elsewhere which inhibit their school attendance, performance at school, or study outside school; (d) improve scholastic achievement, thereby opening doors for further education or training employment; (e) equip pupils for decision-making and leadership roles in the community and in spheres of industry, commerce and public service; (f) equip pupils for

their future roles as citizens in a society which is undergoing, and will for the foreseeable future continue to undergo, rapid and profound change; (g) help disadvantaged young people to adopt roles in society for which few, if any, role models exist in older generations (at the simplest level this applies even to the role of school student).” (p. 105)

Wallace (2008) also noted the TASC model was designed to focus on the problem-solving process for gifted students. For instance, gifted students evolved the nature of the TASC framework through active and practical, hands-on, everyday problem-solving activities that they identified as problematic to themselves.

Initial research. The TASC model began with a 14-year action research project in which the overall goal was to study the needs of the disadvantaged Zulu population in their apartheid homeland of KwaZulu, South Africa (Wallace, 2008). One of Wallace’s goals was to develop a range of appropriate thinking skills to promote self-esteem, independence, and empowerment by designing curricula that were relevant to, and contextualized in, Zulu culture. In her first pilot study of the TASC Project, Wallace found that the 28 students who participated in the intervention all gained the highest matriculation results ever achieved amongst Black students in KwaZulu/Natal in their Senior School Certificate. Also, Wallace found that all students who participated were accepted at universities with full scholarships to pay their fees and support their studies. In a follow-up meeting, all 28 students reported that their first action on arriving at university was to set up a TASC club so that they could teach fellow students the problem solving and thinking strategies they had used to master their studies (Wallace, 2008).

Purpose

The purpose of the current analytical review was to examine the uses of the TASC model to teach gifted students and develop their creativity. To provide a very conservative operational definition of creativity, The researcher emphasized the unique product, which has been the most easily measurable way to define or test creativity. Hennessey and Amabile (2010) defined creativity as a product, idea, or problem solution that was valuable to a person or society. In the TASC model, students learn the process of creativity to come up with unique products or solutions.

Over the past years, the researcher of the current review and colleagues have worked to implement and develop a model that would address the needs of gifted students in general education classrooms. Researchers have found the TASC model (Alhusaini & Maker, in review; Maker & Pease, 2008; Maker & Zimmerman, 2008; Wallace & Maker, 2007) to be a practical and effective model with learners at all levels of education, especially when combined with Problem Based Learning (PBL) and the Discovering Intellectual Strengths and Capabilities while Observing Varied Ethnic Responses (DISCOVER) model (i.e., REAPS). For example, PBL has

provided substantive content and connections to real-world problems, while DISCOVER has provided guidance for teachers in designing problems for students to solve and TASC has contributed a process for solving them. After having conducted comprehensive reviews on the DISCOVER and PBL models (Alhusaini & Maker, 2011); in the current analytical review, the researcher wish to investigate deeper into understanding the TASC model alone. Towards this end, the researcher gathered six books authored by Wallace, as well as more than thirty peer-reviewed articles written by various researchers. The question that guided the study was as follows:

- How has the TASC model been used to develop gifted students' creativity throughout educational research?

Method

The researcher of the current review was involved in an educational research team from the University of Arizona, which was hired by the Ministry of Education in Saudi Arabia to develop curricula for 13 new special schools for gifted students (\$160000, Contract Number: 25/M/M/35). The research team first conducted a literature review to provide a research-based evaluation and synthesis of best practices before designing the curricula for these new schools. The University of Arizona research team chose to begin with “hand searches” rather than “keyword searches,” because keyword searches are often unreliable due to the differing words used by search engines and authors. The team chose six well-known journals in the field of gifted education (i.e., *Gifted Child Quarterly*, *Journal for the Education of the Gifted*, *Journal of Advanced Academics*, *Roeper Review*, *Gifted Education International*, and *High Ability Studies*) between January 2005 and June 2014. This method yielded a total of 1222 articles (See Table 1).

Table 1.*Total Number of Abstracts in Major Journals in Education of the Gifted*

Journal	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gifted Child Quarterly	23	20	23	23	34	26	25	22	21	10
Journal for the Education of the Gifted	15	15	17	18	19	17	27	19	24	11
Journal of Advanced Academics	16	22	19	20	20	20	19	14	12	3
Roeper Review	22	28	14	26	21	22	15	21	22	10
Gifted Education International	45	29	42	35	32	42	10	22	22	15
High Ability Studies	20	14	21	14	14	12	14	32	12	0
Total	141	128	136	136	140	139	110	130	113	49
1222										

Through this review process, the team selected 367 abstracts for further review based on seven inclusion criteria (Maker, Alhusaini, Zimmerman, Pease, Schiever, & Whitford, 2014):

1. The author was a well-respected professional in the field of education for the gifted, or if a new researcher, was at a respected institution.
2. The content was appropriate for grades 1 to 12.
3. The content of the article was of high quality.
4. The programs and curricula were school-based.
5. The article or study was about gifted students, and if a study, the authors specifically conducted a separate analysis of the results for gifted students.
6. The academic areas were science, technology, engineering, mathematics, ethics, reading, writing, history, or geography.
7. The focus was on teacher behaviors or methods in classrooms and programs.

For the first phase of the Saudi project, the research team analyzed and synthesized only 133 articles out of the 367 selected articles. They decided that the 234 articles, which included teaching practices, should be analyzed and synthesized in the second phase of the Saudi project (See Maker, Alhusaini, Zimmerman, Pease, Schiever, & Whitford, 2014). Unfortunately, the Saudi project has been canceled due to some economical challenging. Therefore, the author has reviewed all of the 234 unused articles to select those which were about the TASC model. For the current analytical review, the author reviewed all of the unselected articles, out of the 234 articles, and found that 30 were related to the TASC model. Out of the 30 articles, the researcher selected 15 articles that were school-based projects and specifically addressed the TASC model. The author also conducted an online search to find early publications of the founder of the TASC model (i.e., Belle Wallace). My former professor, C. June Maker, provided me with 6 books authored by Wallace and colleagues to be used for this analytical review.

Findings

Social studies. In this category, Wallace (2003) published a book entitled, “Using History to Develop Thinking Skills at Key Stage 2,” and the purposes of this book were to introduce the TASC model to teachers and examine topics of history from the National Curriculum Program of Study, illustrating how these topics could be taught by focusing on problem-solving and thinking skills. Wallace included seven lesson plans on the unit of ancient Egypt. Although the overall content area of these lesson plans was history, other content areas (e.g., geography, math, and vocabulary) were included. In the first lesson, within the “Generate” step, students had to discuss the concepts AD and BC; they also were asked to practice counting forwards and

backwards across zero. After teaching the unit, Wallace (2003) claimed that students' thinking processes became automatic as students recognized opportunities to use them, students worked voluntarily during morning and lunch breaks, students learned how to work in teams, students were able to handle depth and complexity, they realized the important of planning, and students' achieved well beyond the target goal. The researcher agreed that using an interdisciplinary approach was good in the lessons plans. However, the connections between Wallace's findings and the lessons plans were also unclear, as she did not provide any information about the teacher, how she collected data, or her data analysis.

With a population of Navajo students, Reinoso (2011) conducted a quasi-experimental (i.e., one group posttest) study to examine the effects of alcohol within a community on the Navajo nation. The author's central claim was that alcoholism had been a critical problem in Navajo nation, and sixth grade students needed to be educated about alcohol in new ways. Participants were from a self-contained sixth grade accelerated class. The class was comprised of 24 Navajo students, (17 boys and 7 girls). Reinoso used observational data, but she did not provide any information of how, when, or where she collected her data. The researcher stated that, "*as a result of this teaching unit, students showed enthusiasm and involvement in developing realistic solutions to a community problem that affected all of them. The students also gained valuable skills from the required curriculum as outlined in the Arizona State Standards in language arts, science, math, and technology*" (p. 299). Although the community awareness unit was well designed, the researcher did not explain how the data were collected or analyzed which the same issue that the researcher found in Wallace (2003).

Science. In the book "Teaching Problem-Solving and Thinking Skills through Science," Wallace, Cave, and Berry (2009) made connections between the TASC model and scientific thinking (in their introduction). The authors gave examples of ways in which scientific thinking and the TASC model processes have been similar. They also explained how teachers could plan their lessons to be cross-curricula (i.e., interdisciplinary) by using the TASC model. For example, a lesson could include many activities, such as literacy, numeracy, art, music, history, and geography. The authors also provided some example lessons from the curriculum of Key Stage 1 and 2 for the teachers to model. Even though this book was conceptual rather than empirical, the researcher believe that making connections between the TASC model and scientific thinking clarified the model in a way that "Using History" failed to accomplish. More empirical research in the subject of science is needed to extend beyond conceptual or theoretical ideas into recommendations for evidence-based practices.

Similar to Wallace, Cave, and Berry (2009), Davies (2008) was interested in science as he conducted an experimental study in which the TASC model was used in science to assess whether the model would improve gifted students' thinking

skills, problem-solving strategies, self-concepts, motivation, self-monitoring, and self-evaluation skills. Davies used a survey and structured observation of six intervention lessons and found that the TASC model was easy to incorporate into the lessons once the children were familiar with all eight steps. The model was found to be effective in involving children in their own learning and creating their own problems. The researcher concluded that a teacher has to be skilled in deciding on the most appropriate problems relevant to the lesson's learning objectives, and must involve the children in the decision-making. Davies did not report any information about the study participants or how the data were analyzed. Also, the researcher did not employ two observers, precluding any calculation of inter-observer agreement; he also did not use any method of triangulation to examine the accuracy of the analysis.

Using the TASC model to teach English and Science lessons, Leyland (2009) conducted a case study to examine how the TASC model could be used in his classroom (i.e., Key Stage 2)? The intervention was to teach the topic of time. The researcher based his conclusions on observation of his own students. Leyland found out that using group work in his class was the key element to successful implementation. He found that the value of the TASC model was that, "*it enabled me to stand back from the activities. I could then observe the processes that the pupils were using to achieve the objectives, which they themselves had set*" (p. 303). Although the research provided an appendix of his teaching plan, his study did not include information about the length of the intervention or how well the data were collected and analyzed.

Similar to the purpose of Wallace, Cave, and Berry (2009) of professional development, Maker and Zimmerman (2008) wrote a conceptual article to examine similarities between the DISCOVER and TASC models; the similarities among the DISCOVER, TASC, and PBL models; and ways of integrating the DISCOVER, TASC, and PBL successfully. The authors focused on the Problem Continuum of the DISCOVER model in their analysis. Since Maker and Zimmerman had argued that not all students were able to solve problem types V and VI, they suggested the integration of the TASC model with the DISCOVER model. They also argued that using the ideas from PBL of the teacher being a facilitator, a hands-on approach, and group-work would make this integration of DISCOVER and TASC successful. Although Maker and Zimmerman discussed the application of using the integrated models to create a professional development workshop that was then given to teachers, the researcher would not classify their article as empirical work since it did not contain a methodology section. The authors used some their observations made during the professional development workshop to support their claim that these three models should be integrated.

Similar to Maker and Zimmerman (2008), Willmoth (2008) also wrote a conceptual article to argue that the TASC model served the national curriculum claims in the UK—especially the four Attainment Targets (AT) of scientific enquiry. The author pointed out the benefits of using the TASC model, noting it was practical, useful, and served the national curriculum aims. The author suggested that the TASC model supported teachers and students in understanding that problem solving had a process and that knowledge of the process could help learners to think towards solutions. Also, the TASC model provided a structure that exposed thinking and helped teachers to model it. Willmoth argued further that, since the TASC model promoted a constructivist approach to learning, it helped teachers and students to move towards creative thinking. He noted that the TASC model encouraged students to ask questions and think for themselves. The article was very practical and the argument was convincing. However, empirical evidence was not available to support Willmoth's argument, which was the same issue that I found in Wallace, Cave, and Berry (2009).

Mathematics. Faulkner (2008) conducted a case study to examine how students were introduced to the TASC model and how the model was modified to meet their needs. Participants were 35 students, and they represented “*the top ability sets for their particular year groups: one from Year 6 (11 year olds comprising 10 boys and 3 girls), and the other two from Year 7 (12 years olds comprising 6 boys and 6 girls in group A, and 6 boys and 4 girls in group B). The school has identified them as lying in the top 10 percent of the ability range as compared with the country as a whole and are, therefore, recognized as talented mathematicians*” (p. 289, 299). Faulkner used two main methods to collect the data: a questionnaire and group interviews. The researcher used the raw data to calculate the frequencies of the students' responses to each question. Faulkner found that the students who recognized the models as “belonging” to them had an emotional attachment to the work and that they had enjoyed “playing” at mathematics. The researcher did not use a correct statistical analysis, although the sample size was large enough to do so. Frequency has been the weakest analysis because it does not allow for statistical inference and has been misleading. For the interviews, the researcher did not use any methods of triangulation.

Language. Humphries (2008) used the TASC model in an Action Research project to develop students' language ability (through storytelling). Participants ranged from ages 10 to 11 and were from two primary schools. Over a period of two weeks of teaching students storytelling, the researcher observed the students and found that the TASC model was effective because the students used its steps in a practical way. For instance, Humphries found that, “*the TASC [model] gave the children the necessary structure and support that enabled them to explore their feelings creatively and imaginatively*” (p. 257). Also, the researcher explained what the students did in each step of the TASC model. Although the article was written for teachers, it was

a small-scale case study, and there was no information about the number of participants or the data analysis processes. Overlapping English with Science lessons, Leyland (2009) conducted a case study to examine how the TASC model could be used in his classroom (i.e., Key Stage 2). He found that the model was effective in both English and Science when students engaged in-group work.

All content areas. Ball and Henderson (2009) used the TASC model to challenge gifted students in an inclusive environment. The main research question asked how teachers could implement the TASC model for the first time. For one day, all students in the elementary school were allowed to design and make a garden in a quiet area. Researchers believed that this task would be inclusive for all children from the age of 4 to 11. Ball and Henderson used observational and interview data to reach their conclusions. Researchers found that when the teachers selected a task that was very inclusive for all children (e.g., design and make a garden), gave the students the sources and materials, and let the students discuss and evaluate their work, the TASC model could be implemented successfully. Although using observational and interview data increased the validity of the findings, there was no information about the data analysis as well as the intervention was one day, which served as a limitation in this study.

Similar to Ball and Henderson's (2009) study, Cartwright (2012) conducted a study to examine how teachers could enable gifted students to be in the "driver's seat" of their learning. Participants were students at the secondary school level (i.e., seven students were gifted). Cartwright did a qualitative study using document analysis (i.e., students wrote their reflections and essays). The main idea of the intervention was that students overlapped many different content areas in their final products. Cartwright included students' responses in her article; for example, one student said, "*Before I had started this project I had never written an essay on such a large scale. Doing this project has not only allowed me to develop my writing skills but to write to a new audience, which is something I had not done before... above all I have learnt to challenge my assumptions and that planning is an essential part of a project*" (p. 269, 207). Although using qualitative research with document analysis as the main data collection method was interesting, the researcher did not include information about the data analysis processes, which is the same issue that I identified in Ball and Henderson (2009).

Different from Cartwright's (2012) and Ball and Henderson's (2009) studies, and by using a short longitudinal study, Fitton and Gilderdale (2008) studied the use of TASC at Ollerton Community Primary School (i.e., 300 students from Foundation to Year six, four to 11 years old). Researchers stated that the project took about 2 years and served one of the most disadvantaged populations (e.g., high unemployment, high levels of social deprivation, half the students were known to be eligible for free meals). Fitton and Gilderdale used interviews, observations, and national tests scores to derive their conclusions. Researchers found that students

understood the TASC model and were able to show how the process had supported them. Also, teachers had access to appropriate resources with the learning and teaching materials. Finally, *“the school achieves well at all levels despite a high level of entitlement to free school meals, and above average number of students on the SEN register, and a relatively high mobility rate... When Ollerton's standards are judged nationally against similar schools, standards in reading and writing at Key Stage 1 & 2 (students aged 6 to 11) are above average, and are in line in mathematics”* (p. 221). This project included very rich and diverse data. However, the study was conducted with a unique population, limiting the generalizability of the researchers' findings.

Goddard (2008) was the Head Teacher of the Ramridge primary school, in an area of high social deprivation with a population identified as having learning difficulties and disabilities well above the national average. She conducted a case study to try to determine the best way to use the TASC model in her school. Goddard's main data collection method was interviews of selected participants (e.g., teachers and students). The researcher found that the TASC model was useful and adaptable. For example, one of the student participants said, *“It feels creative and you have a choice of what you make”* (p. 286). Also, one of the school teachers reported, *“the children have become more receptive to others' suggestions since the emphasis is on working with their peers, and also more self-confident since they realize that the practice of re-thinking' means that they can't fail”* (p. 286). The study was a small-scale case study and included no information about the data analysis processes. For me, the major limitation in Goddard's study was selecting some participants for interviews.

Different from Goddard's (2008) study, Holyoake (2008) conducted a case study at Tollgate Junior School to examine the effects of the TASC model on teachers and students of 3rd through 6th grades. Holyoake used observations and informal interviews to derive her conclusions. She found that the sixth grade student participants *“were able to solve their own problems, and where certain aspects were particularly challenging, the children's determination to succeed increased.”* Also, for fifth grade students, Holyoake found that, *“children enjoyed working in other classrooms with different adults. Teachers gained an insight into how the children worked at solving the problems”* (p. 214). For 4th grade students, Holyoake concluded that, *“the children were motivated by real life aspects and the fact that it would be put into practice. The teachers were impressed by the children's ideas and independence”* (p. 214). Finally, for 3rd grade students, Holyoake observed, *“the children benefited from learning real-life skills, e.g. handling money, growing plants and working with both confidence and independence”* (p. 214). The researcher did not report on the length of the intervention or how well the data were collected and analyzed, which has been a common issue in most reviewed studies.

Within gifted students, Lakey (2009) conducted a study to investigate strategies for challenging gifted and talented students to improve their learning capacities and to determine if a focus on problem solving and thinking skills would raise the overall

quality of teaching. Ten schools participated (i.e., 8 Primary, 1 Junior, and 1 Infant school). The project was designed as an Action Research study. The main data collection method was interviews; however, observational data were collected as well. The researcher found that the model was effective, as the students stated that, “*I feel fine, tired and excited. We worked well together, listening to different ideas. The day went well. I think we came up with some good ideas quickly*” (p. 62). Also, teachers stated that, “*I learned such a lot from observing the children working with others they had not worked with before. It was great to see the children making lots of decisions in a short space of time. It was so interesting to work with the children from all three-year groups*” (p. 62). Although the researcher included some appendices with sufficient information, there was no information given about the data analysis processes.

Wallace (2008) published the article entitled, “The Early Seedbed of the Growth of TASC: Thinking Actively in a Social Context.” The researcher wanted to reflect on when and where the TASC model was first developed. For example, she wanted to explore the theoretical basis of the TASC model, as well as questions of the effectiveness of the model. Wallace started her article by reflecting on Freire's (1998) concept of the banking model of education, Vygotsky's (1978) work, and Sternberg's (1985, 1997, 2001) theory. Wallace included 28 mid-secondary school students who were chosen by their teachers to participate in this case study. All participants were from the KwaZulu/Natal group. Also, she used an Action Research approach in this 14-year research project in South Africa. The researcher observed improvement in the students' thinking skills. Also, all of the participants received university scholarships to pursue undergraduate degrees. The data collection procedure as well as data analysis process were not available.

Discussion and Conclusion

The author was struggling to consider the selected publications as studies because he strongly believed that some of them did not meet the minimum requirements of research despite the fact that they were peer-reviewed. Unfortunately, there is an insufficient amount of research about the TASC model to select from. The majority of the relevant literature lacks depth and contains major methodological flaws—possibly because the targeted audience for such literature has been teachers and practitioners. Also, it seems to me that most of the authors who write about the TASC model do not target researchers and scholars as their audiences, which affects the rigor of their work. Most of the authors who write about the TASC model are teachers or practitioners who base their conclusions on their own studies or on quasi-experimental designs implemented in their schools. Therefore, the literature on the TASC model seems to be a conversation among teachers and practitioners. It is extremely hard to read and evaluate this type of work through a critical academic lens.

It was difficult to classify the studies into different categories. For instance, the researcher was planning to investigate the use of the TASC model in different grade levels, with different ability levels and different cultural backgrounds. However, the researcher found that many of the studies would be classified and used multiple times under this scheme, so the researcher decided to restrict his analysis and synthesis to the content areas. However, the researcher will highlight some other findings. When examining the uses of the TASC model in different content areas, the researcher found two publications that focused on social studies, which were Wallace (2003), who examined general education students in Key Stage 2 in the UK, and Reinoso (2011), who studied gifted sixth grade students in the Navajo nation. Both authors found that the model was effective in teaching students about history and alcoholism. However, both publications were written about samples of elementary school students, so future researchers should conduct their studies on populations from the upper school levels.

When investigating the uses of the TASC model within science, the researcher found two publications that focused on professional development and how elementary school teachers could teach science—these were Wallace, Cave, and Berry (2009) and Maker and Zimmerman (2008). However, two studies were conducted with gifted students, such as Davies' (2008) study on gifted students in the elementary school and Leyland (2009) with elementary school students (i.e., Key Stage 2). Both Davies' and Leyland's studies were conducted in the UK. Finally, one conceptual article (Willmoth, 2008) was written to address the benefits of the TASC model with regards to the UK national curriculum aims of scientific enquiry. All publications emphasized that the TASC model is an effective and useful tool to use. Future researchers are encouraged to conduct their studies with students from upper school levels. When the researcher looked at the uses of the TASC model within mathematics, he found only one study (i.e., Faulkner, 2008), in which students were highly gifted and at the end of their elementary school levels. Faulkner found that the TASC model was an effective method for teaching gifted students math. Therefore, more research in math is needed. However, when the researcher investigated the uses of the TASC model within language, he found two studies (Humphries, 2008; Leyland, 2009). Humphries used storytelling with general education students in two primary schools, but Leyland used science projects to teach English with general education students in one elementary school classroom. Both Humphries and Leyland found that the TASC model was effective in teaching language. Conducting more studies in the uses of TASC model with language are needed.

When examining the use of the TASC model in all content areas, the researcher found seven studies (Ball & Henderson, 2009; Cartwright, 2012; Fitton & Gilderdale, 2008; Goddard, 2008; Holyoake, 2008; Lakey, 2009; Wallace, 2008). Ball

and Henderson's study was conducted with gifted students in the elementary school levels; Cartwright's also was undertaken with gifted students, but at the secondary school level; Fitton and Gilderdale's 300 disadvantaged elementary students as a whole school project; Goddard's was conducted with primary school students (i.e., general education); Holyoake's was done with general education students from 3rd through 6th grade levels; and Lakey's study included gifted and talented students in ten different schools. The researcher also found that the studies of Ball and Henderson, Cartwright, Fitton and Gilderdale, Goddard, Holyoake, and Lakey were all conducted in the UK. On the other hand, Wallace's study was conducted in South Africa with 28 gifted students from the KwaZulu/Natal group. Wallace's study was a 14-year old action research project. All of the studies in this category emphasized that the TASC model was effective in teaching and overlapping all academic content areas.

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