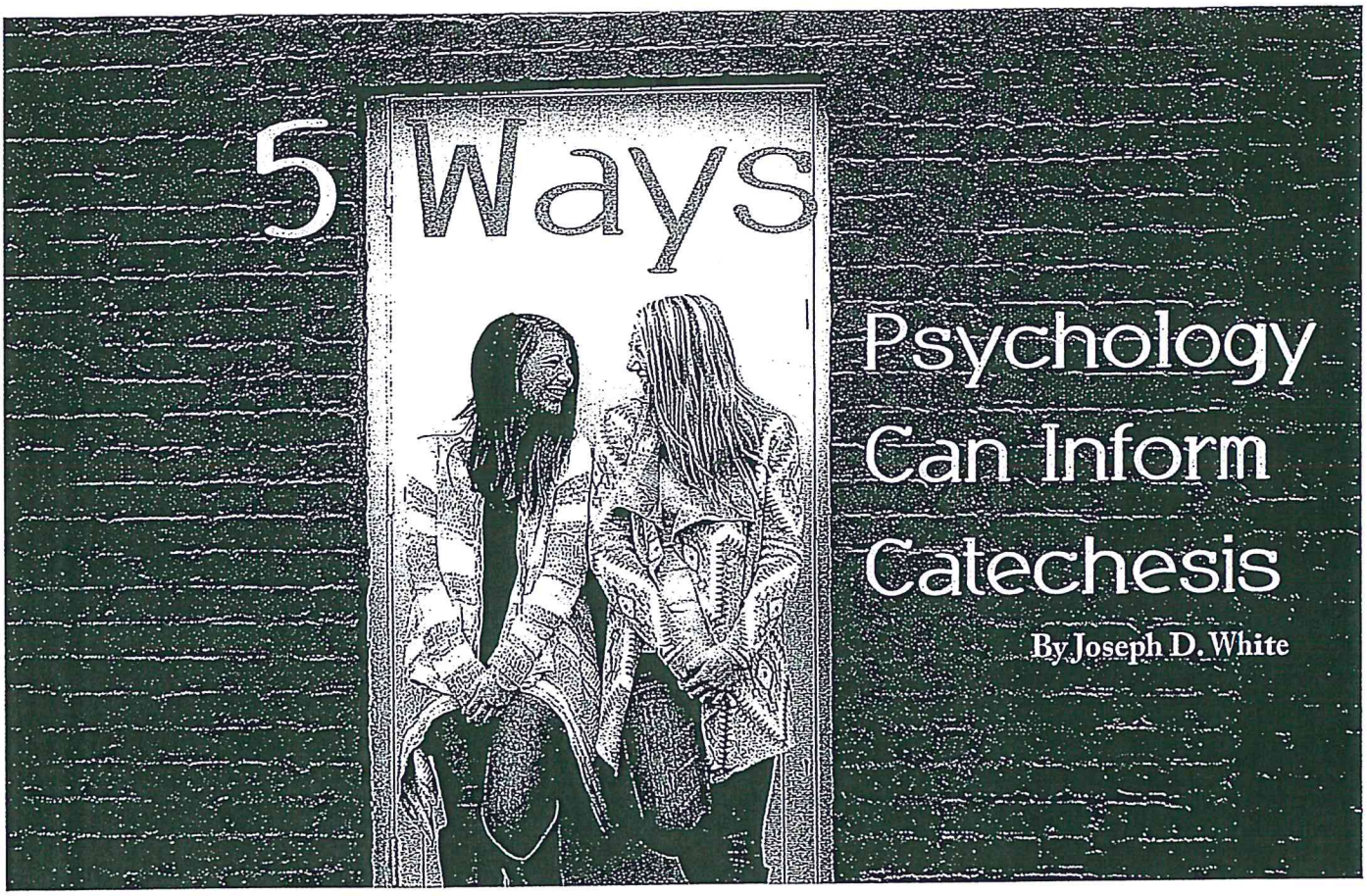


As a Clinical Child and Family Psychologist who works primarily in the field of catechesis, one particular interest of mine is the integration of what both faith and science tell us about the human person. In secular society, and even among some individuals in the Church, there is the misconception that science and faith are somehow incompatible. However, some of the greatest minds both in science and religion have disputed this assumption. For example, Albert Einstein famously said, "A legitimate conflict between science and religion cannot exist. Science without religion is lame, religion without science is blind."[1] Similarly, in a letter to Director of the Vatican Observatory Reverend George V. Coyne, S.J., St. John Paul II wrote, "Science can purify religion from error and superstition; religion can purify science from idolatry and false absolutes. Each can draw the other into a wider world, a world in which both can flourish... We need each other to be what we must be, what we are called to be."[2]

Christians have viewed the field of psychology with skepticism from its very beginning. After all, Sigmund Freud, considered by many to be the founder of psychology, called religion "an illusion."[3] But as the field of psychology has grown and its methods have improved, many have found it to be more and more compatible with Christian thinking. In fact, what we find by science to be true about the human mind and human emotion would necessarily have to be compatible with our faith, since God himself created us to think and to feel.

Using what we know about how people think, feel, and behave can make us more effective in faith formation. The following is a discussion of five pressing questions in the field of catechesis that may be answered, at least in part, by research in the social sciences.

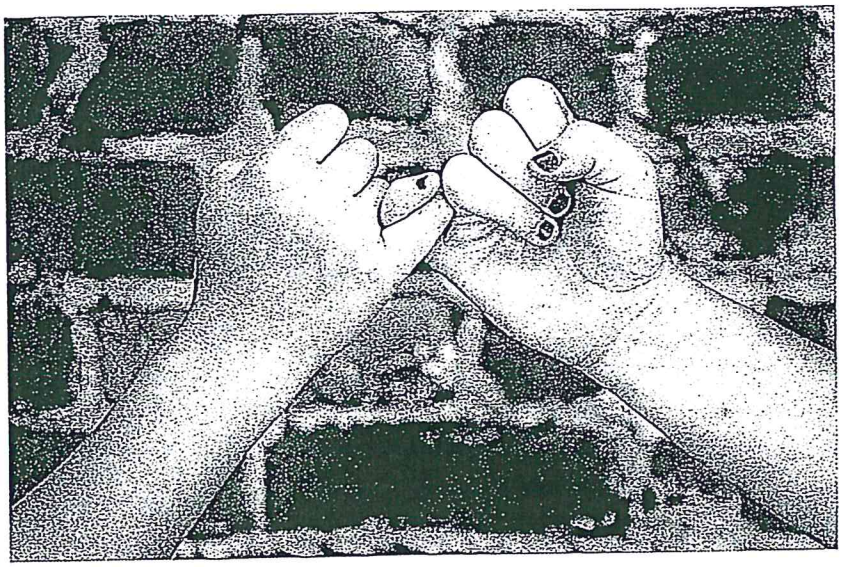
1. How can we get our learners to pay better attention in faith formation sessions?

Scientists studying the brain have determined that attention processes take place primarily in the prefrontal cortex of the brain, located just behind our foreheads. The prefrontal cortex is like the CEO of the brain, responsible for what we call "executive functions." It is the last part of the brain to finish growing; although it is present early in life, it is not completely finished growing until the early twenties.

Current research on attention span tells us three important things we can use in our work as catechists. First, attention span is about equal to age in minutes, up to the early twenties (when the prefrontal cortex is fully grown). That means if we try to deliver a 10 minute talk to a group of second graders, almost every one of them will have tuned us out after 7 or 8 minutes!

A second body of research indicates that attention spans are on the decline in our country. This is most likely due to two things: the growth of technologies that adversely affect brain development (see the work of Dr. Clifford Nass at Stanford University for more about this) and a push for more academic approaches to educating preschool and kindergarten students. Research indicates that the latter actually harms their intellectual development, since an overly academic approach to early childhood education may inhibit brain structures that are dependent for their development upon social interaction and child-directed play.

Thankfully, a third line of research in attention is more hopeful for those of us who work with young learners: Science indicates that involving multiple senses in learning actually "resets" the attention clock. For example, if we are telling a story to a group of young learners and we introduce a new visual aid or have them move around, they will pay more attention to the material we are presenting. Additionally, the more active learners are in the learning process, the better they pay attention and the more they remember.



2. Why can't we get families engaged in religious education?

I hear this question perhaps more than any other from catechists and catechetical leaders. The key to answering this question, I believe, is more attention to the developmental stages of family life. It's a truism to say everything changes when you have a child. The things couples do, the places they go, the people they spend time with—everything is rearranged and restructured when the first child is born.

Unfortunately, we often provide little for families between baptism and the sacramental years. At precisely the time that people are ready and willing to completely restructure their priorities and rearrange their lives, the parish often has little to offer. What if we saw baptism as an evangelization moment, a time to partner with parents, to take them by the hand and walk with them? Fewer people live close to extended families than in previous generations. Many parents are seeking community and support in these early parenting years. When they don't find it at the parish, they find it elsewhere—among the other families at the preschool, ballet classes, etc. By the time we see the families again in elementary school, their plates are full and there is little time to engage with the parish. What if the parish functioned as an extended family? What if families were actively involved from baptism on? Then it wouldn't be a struggle to get mothers and fathers engaged in elementary school; they would already be engaged.

3. How can we deliver catechesis that is both rich in content and developmentally-appropriate?

One key to formulating a curriculum in any subject matter is knowing "when" to teach "what." Our knowledge of brain development, structure, and function has exploded over the past few years. We can use what we know about how the brain grows to deliver the right content at the right time. Child development research tells us that children and teens are most engaged in the material when they are just ready to master it with some support. If we present it too early, they might be frustrated and turned off. If we present it too late, they lose interest because it's not challenging enough. Paying attention to what's happening in brain development can help us present particular topics in religious education precisely at the right moments.

Here are a few examples: The attachment and relationship area of the brain is growing at its fastest in the first five to six years of life, so preschool and kindergarten is an ideal time to focus faith formation around forming an attachment to Jesus and the parish community. In first and second grade, the rapid growth of the cerebral cortex provides an excellent opportunity to learn new vocabulary, facts about the faith, and the steps of our sacramental rites. In third grade, children have entered what social developmental theorist Harry Stack Sullivan called the "chumship" stage—when peer relationships increase in importance and children often have "best friends." This is an ideal time to ask learners to work together in pairs or small groups and to talk about what it means to be a Christian community. In fourth grade, children are beginning to internalize standards of behavior. This is the beginning of

a process in which external "rules" become internal morals and values. It's important to revisit conscience formation at this stage, as children will understand the Beatitudes, the Commandments, and other foundational moral principles in a different light. In fifth grade, children are beginning to have a better understanding of signs and symbols, so a review of the Seven Sacraments is appropriate.

Fifth grade also presents us with another important developmental window. There are two ages when science tells us children are most likely to think about their future "adult selves." One is age 17, which is no surprise, since our culture defines adulthood as age 18. The other age might be more surprising—age eleven. At this time, children are experiencing a major physical growth spurt, and they can't look in the mirror without realizing they won't be children forever. As they realize they are becoming young men or women, they naturally ask themselves, "What kind of man or woman will I be?" Age 11, then, is an important time to talk about vocations—not only Sacraments at the Service of Holy Communion, but also vocations with a small "v." Children should be encouraged to ask God about his plan for their lives, and to begin discovering the answer through their interests and talents, opportunities, and learning about the faith.

Beyond the elementary years, children grow in their abstract reasoning ability and reading skills, thus providing opportunities for more study of Sacred Scripture. They also continue to develop their identity as young adults and members of a community, so both discipleship and Christian community become important topics to learn and experience.

Paying attention to the development of our learners helps us form them in the most effective and efficient way. It also helps us to foster the relationship so important in any catechetical process. When we meet learners where they are, we have the opportunity to accompany them on the path to discipleship.

4. How can we prevent risky behavior in adolescents?

Recent research points to two important ways to prevent risky behavior—such as drug and alcohol use and sexual activity—among teens. One is as simple as the family meal. A body of research by the Center for Addiction and Substance Abuse at Columbia University shows that teens who have at least 5 to 7 meals per week with their families (vs. 2 or fewer) are much more likely to have higher grades, higher self-esteem, lower incidences of depression and suicide, lower rates of substance abuse, and many other positive outcomes.

Another line of research helps us better understand how to help adolescents make responsible choices. Our default position has sometimes been to emphasize the bad things that could happen if teens make poor choices. However, teens often have a sense of invincibility. If we say, "9 out of 10 people die from this," they might be inclined to think, "I'll be the one to survive." A highly publicized study by Jemmott, Jemmott, & Fong from University of Pennsylvania and University of Waterloo in Ontario[4] found that programs for prevention of risky behaviors are more effective when they are goal-focused, encourage critical thinking, and allow group discussion of the issues involved.

5. How can we provide teens with good examples to follow?

You might have noticed that television commercials for children's toys often feature children who appear to be too old to be playing with the toy being advertised. This is not an accident. Marketing executives know that research shows children are most likely to emulate a model who is just a little older, since they see this older child as being relatable and also more competent and mature. This points to the power of young saints as examples for children and teens. Learning the stories of saintly young people like St. Dominic Savio, St. Therese of Lisieux, Blessed Jose Sanchez del Rio, St. Clare, and Blessed Francisco and Jacinta of Fatima can help to impress on our youth that God calls them to be saints *right now*. Through these examples, they learn the power and beauty of the Christian life fully lived. Of course, the living examples of important people in the child's life are equally important, beginning with parents, older siblings, teachers, youth ministers, and catechists.

Psychology, like all the sciences, provides us with knowledge about the world and about ourselves. As believers, we must never fall into *scientism*—the idea that all truth is revealed through science alone—but we should make good use of the knowledge gained through science, especially where it points us to more effective ways of sharing the light of faith.

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Notes

1 Albert Einstein, Science and Religion, printed in A. Einstein Ideas and Opinions (Crown, New York 1954,) pp.44-49 quote on p.46.

2 Pope John Paul II, Letter to Reverend George V. Coyne, S.J., Director of the Vatican Observatory, June 1, 1988.

3 The National Center on Addiction and Substance Abuse at Columbia University (2012). "The Importance of Family Dinners VIII: A CASA Columbia White Paper": New York: Columbia University.

4 Jemmott, J.B., Jemmott, L.S., & Fong, G.T. (2010). Efficacy of a theory-based abstinence-only intervention over 24 months: A randomized controlled trial with young adolescents. *Archives of Pediatric Adolescent Medicine, 164,* 152-159.